HINTS ON GARDENING IN INDIA

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HINTS ON GARDENING IN INDIA.

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"Gardening, man's primeval work,
Is a most blesséd toil:
It cheers a man,
Makes him kind-hearted, social, genial,
Forms a serene parenthesis from care,
And his whole nature raises and improves."

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PREFACE.

THESE *Hints* were writtten for the use of the Soldiers of the British Army in India, to whom a beneficent Government not only offers the use of land, but yearly presents a supply of flower and vegetable seeds, and prizes for their successful treatment, with a view to providing for the men a pleasant and useful employment for their leisure hours. The wisdom of this act of grace cannot be doubted, as it not only furnishes healthful recreation and tends to relieve the monotony of the soldier's life in India, but the taste for gardening that is encouraged may supply the retired soldier with the means of earning a respectable living and thereby improve the status of the rank and file. The author is satisfied that there are many others by whom such a book is required, as, besides Firminger's expensive work, there is little else on the subject in print. Amateur cultivators are very numerous in

India, and their number would be greatly increased if disappointment and ill-success, through want of a simple guide, did not cause many to keep their natural taste in abeyance. If these *Hints* tend in the slightest degree to 'form a serene parenthesis from care,' they will not have been written in vain.

G. MARSHALL WOODROW.

Gunesh Khind, Poona, March 1876.

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HINTS ON GARDENING.

PART I.

SOIL AND SITUATION.

THE best soil for gardens that is to be found in this country is undoubtedly that alluvial formation that is to be found on the banks of most rivers. It varies in colour and consistency to a great extent with the formation of the water-shed of the river, but is very often of a yellowish brown colour, and contains a good proportion of vegetable matter thoroughly incorporated with the fine soil brought down by river floods.

The black soil of the Deccan is excellent for gardens, but is greatly improved by a liberal supply of vegetable matter as manure. The same may be

said of most soils that have been long under culture for ordinary field crops. The constant use of ashes as manure has brought down the supply of vegetable matter to a very low ebb. The most convenient means of restoring this essential element of a fertile soil is to cut down and bury all weeds; if they are buried while in a fresh state, the soil absorbs the gases that are formed, and its fertility is greatly increased thereby. In the situation of the garden it is of great advantage to have protection from storms, and especially from East winds, thorough drainage, and protection from floods. But very often the site of the garden has to be a subordinate consideration, because it often occurs that the finest garden soil is an expensive or inconvenient site for a house, and especially in the case of barracks, which are generally built on a high situation so as to secure a perfect supply of pure air and thorough drainage. In such situation the soil that nature is constantly forming by the crumbling of rocks is periodically washed down to lower levels, and of course is not to be found of any great depth; but if the rock is of such a nature that it will yield to well directed blows of a pick, it may be turned into a fertile soil by breaking it up and mixing with all kinds of vegetable refuse. Weeds buried in a fresh state form an excellent manure for a soil of this nature, and it often yields flowers with more brilliant colours than a rich soil would produce. Heating

manures such as night-soil, horse or sheep dung, should be avoided when the soil is shallow and stony, as it must be in such a position.

Preparation of the Soil.

Deep thorough working is, in all countries, the mainspring of success in cultivation; but if deep working is of great importance in temperate climates, it is doubly so in this country, because at a distance from the surface a constant supply of water is available for the plant's wants, and if the soil is deeply worked, the roots reach this water and are beyond the scorching power of the sun, therefore growth goes on steadily and much less watering is necessary. Dry weather should invariably be selected for digging, and if possible for all kinds of soil working; when the sun dries up a soil that has been trodden on while wet it breaks into hard lumps, and in this state is unable to absorb from the air a full share of the fertilizing elements offered to it. Repeated digging at intervals of a month during the hot season has a wonderful effect in fertilizing the soil by bringing the plant-food it contains into a condition to be readily taken up by the roots; but it is a bad system of cultivation that is constantly abstracting from the soil the fertile elements that nature has put there instead of year by year returning to it in the form of manure part of what we have taken away previously.

MANURES.

ALTHOUGH there are certain materials that lay a special claim to the name manure, there is very little either in the animal or vegetable kingdom that may not in some degree share the title, from the parings of one's nails to cast-off boots. All will, by decay, yield plant-food if buried in the soil. Among familiar objects, bones, charcoal-dust, and kitchen refuse are specially valuable. The golden rule of the garden is that nothing but the 'produce' should go outside. All refuse of whatever kind should be buried in the soil, and the earlier this is done the more plant-food will the material furnish. If thrown into a corner to decay, it will only poison the atmosphere with exhalations that might have given fragrance to a rose or size and delicacy to a cauliflower; but such crude manures should not be buried within immediate reach of the roots of delicate plants.

Of all the manures that are available in the neighbourhood of cantonments for growing flowers and vegetables, there is none to be compared to night-soil that has been mixed with soil and buried in a pit for a few months. I have observed in several cases that the night-soil is thrown into a pit, and when nearly full, a coating of soil is thrown on to cover it; that is a good way to create a nuisance and to spoil a

very valuable manure. A quantity of well pulverised soil, as dry as can be procured, should be thrown over the night-soil as soon as it is put into the pit; if the soil is very dry, one part to two of night-soil will be sufficient, but if more is applied the result is better. By this means a manure of the very highest value may be made, and on taking it out about nine months after, it will be found to have no disagreeable smell whatever.

The gases that would have caused a disagreeable smell will have been absorbed by the soil ready to act as plant-food. Of this manure a wheel barrow load to ten square yards of ground, or about a spadeful for each plant of cabbage or cauliflower, is sufficient for high cultivation. After applying this manure, regular watering is quite essential, therefore it should not be used for plants that do not require watering, nor for grain crops or fruit trees. But for all kinds of culinary vegetables and flowering plants, in which rapid growth is desirable, this manure, with the regular watering that is necessary, is the most valuable we have.

Night-soil pits should be dug in a dry situation not subject to be flooded by water and with a good deep soil.

Urine is also a very valuable manure, and especially so for beet and all the cabbage tribe. It should be collected by putting dry soil into the urine pans. Equal quantities of dry soil and urine form a compost that can be worked without any disagreeable effects after it is dried slightly; in this condition it is useful for crops that are naturally of rapid growth and require regular watering.

Ashes.

The ashes from the dung cakes, that are the common fuel of this country, form a very good manure, of which there is little danger of using too much, when mixed with the half decayed leaves and other sweepings as it is generally found. This manure is especially good for soils that are hard and retentive of water or where drainage is defective.

Bullocks' Dung.

Is an excellent manure, of a generally useful character. If old and well decayed, it is fit for the most delicate plants, and is the best manure for roses and other plants of a like nature. It makes an excellent liquid manure, whether old or fresh, and is especially required for balsams and other plants of a like nature.

Sheep and Goat Dung

Is a very powerful manure; it should be used in the form of a liquid by soaking in water and watering the plants with a weak solution; in a dry state, it has strong caustic effects.

Horse Dung,

Unless well rotted, has also a burning tendency, and requires abundant supplies of water to enable it to benefit garden plants in a striking degree.

Leaf Mould

Is of the greatest service to all garden plants, and for many of a delicate nature is essentially necessary. It may be made by burying dead leaves in a pit. If kept moist, six months will be sufficient to make them decay. When reduced to the condition of fine mould, they are ready for use. This mould, mixed with one-fourth sand, or in its absence pounded brick, and one-fourth common soil, is the best compost for seeds to germinate in. With a larger proportion of sand, say about one-half, it makes an excellent compost for striking cuttings.

Dry Manures

Of whatever kind should be well dug into the soil. Left near the surface, they yield up to the atmosphere the constituents that form the most valuable plant-food.

Green Manure,

That is, fresh weeds and prunings of all kinds, form an excellent manure especially suited for thin, stony soils. The prunings of prickly-pear fences may be disposed of in this way with great advantage. When buried at least six inches beneath the surface and kept moist, there is no danger of their growing up again. If well bruised with a mallet previously, decay is more rapid. It is an excellent plan to keep a trench always open into which such sweepings and cuttings may be thrown day by day, and covered up with soil immediately.

Liquid Manure

Is in many cases the most convenient form in which to supply nourishment to crops, and is of special service; if well rotted manure is not available at the planting time, it can be made by soaking dung of any kind of cattle in water for about one day. Fresh horse dung, which in a dry state is injurious to many crops, can be used for this purpose with great advantage.

Liquid manure should be applied during rainy weather, or by mixing a small quantity at a time with the water that is usually given.

IRRIGATION AND WATERING.

FOR vegetable crops it is much better to cause the water to flow over the ground in channels than to carry the water in pots. The ground should be laid out in beds by ridges running at right angles to each other. Two parallel ridges, drawn a foot apart, form a water channel; and if the ground is nearly level, one such channel is sufficient for two lines of beds; if sloping much, a water channel is required for each line; six feet by nine feet is a good size for beds; but if the flow of water is strong, they may be made much larger. How often water should be given to certain crops, and in what quantity, are questions that depend so much on local circumstances that it is impossible to lay down any rule that will be generally applicable; however, a few hints may lead to intelligent observation, the best of all guides.

If the soil is of such a nature that the water drains freely through, it will receive much more water with benefit to the crops than if it is of a retentive nature. In a free draining soil, crops that are of rapid growth, such as cabbage, cucumbers, &c., may be watered once in four days during dry weather, and they will thrive better under such circumstances than if the soil retains water any length of time. A soil that water stagnates in is quite unsuited for a garden.

Young plants, and such as have been lately transplanted, require water often and in small quantities. Once a day is a fair allowance for such. Well established plants growing in the ground are better if they get a good supply at longer intervals; for instance, an ordinary sized rose tree thrives better with four gallons of water once in five days than with one gallon daily, because the large supply of water goes to some depth into the ground, while the small supply is absorbed by the surface soil and a deal of it is lost by evaporation. Plants in pots and tubs require much more water than the same plants would require if planted in the ground, and the quantity that should be given to pot plants should be regulated by the relative sizes of the plants and the pot. If the plant is large in proportion to the pot and the soil full of roots, the plant will receive water daily in dry weather with benefit; if the plants get more water daily than the roots can absorb, or if the drainage is imperfect, the water will stagnate and the soil become sour. In this state it is quite unfitted for garden plants. Although many ferns will enjoy water dripping over them for some months at a time, the least stagnant water will injure them.

Watering should as a rule be done in the evening; but during the prevalence of cold East winds, the morning is preferable.

PROPAGATION.

Seed Sowing.

SEEDS require a light rich soil to germinate in, and are very easily injured by an excess of manure or water. Alluvial soil, such as is formed on the banks of rivers by flood, which bring down decayed leaves and fine soil from the hills, generally contains the required constituents in proper proportions, though sometimes it is too retentive of water. In this case a slight addition of sand or broken bricks brings it to a proper consistency. A good soil for seeds may be prepared by mixing well rotted leaves and sand in equal proportions. If sand is not procurable, broken bricks are an excellent substitute; but very often neither sand nor decayed leaves are procurable; in this case, the half-burned bricks that are so plentiful in the neighbourhood of most cantonments, broken into a coarse powder and soaked in urine or stagnant ditch water, or the fine siftings of charcoal that are to be bought in every bazaar, treated in the same way, form an excellent manure for mixing with any common soil for seed sowing.

It is a very good rule to cover seeds with soil about equal to the circumference of the seed itself.

Great care should be taken in watering seeds not to dislodge the soil or the seed so that its axis of growth may be altered. The seed bed or pot should be shaded from the mid-day sun, but allowed a full share of light, as the tender seedlings grow rapidly, and are easily injured by being drawn up weakly, when light is deficient.

Cuttings.

In propagating by cuttings in this country, most success will be met with by taking cuttings of well ripened shoots. These should be about three joints in length, cut close beneath a bud and inserted about one-third of their length in fine sandy soil or brick dust. Very delicate cuttings, such as those of *Poivrea coccinia* and *Bougainvillea spectabilis*, should be planted in pots prepared as follows:—First potsherds should be placed at the bottom of the pot arranged carefully so as to secure thorough drainage, then a layer of moss, if it can be procured, if not, cocoanut fibre matting teased out will answer. On the top of this place the mixture of leaf mould and sand, let it come up to within two inches of the rim of the pot, then add one and a half inch of sand or brickdust. The cuttings should be inserted in the top layer, barely touching the second one, so as to reduce the danger of rotting and have food ready for the young roots as soon as they appear. The whole should then be

kept in a glass case or covered with a *bellglass*—one of the globe lamps that are so common in this country answers this purpose very well. For cuttings the months of September, October, and November are generally the most favourable. The essential point in striking cuttings is to prevent evaporation from the surface of the cutting as much as possible until it has taken root and is able to replenish the sap that is dried up by the heat of the sun. With this view, cuttings should be protected from bright sun and hot winds as much as possible. In watering cuttings, an equable state of moisture should be aimed at, therefore the water should be given often and in small quantities.

By Budding.

Budding is a very simple yet delicate operation. It consists of removing a bud from one plant, and making it grow on another plant, which must be of the same family and closely related, although it may yield fruit or flowers of an inferior character; for instance, we can bud an Orange on a Lime tree, and a Peach on a Plum tree; but we cannot bud a Rose on an Orange tree. In budding, a single bud is cut from the twig of the plant to be propagated; if there is a leaf attached to the bud, the blade of the leaf should be cut off, then by inserting the knife about half an inch above the bud, cutting slightly inwards and downwards, bring the knife out about half an inch

below the bud; this removes the bud with a small shield of bark attached, and generally a little bit of wood adhering to the centre of the shield. This bit of wood should be removed with the point of the knife. a longitudinal slit a little longer than the shield of bark should then be cut in the bark of the tree to be worked on, and at the upper end of this slit a small transverse slit made to facilitate the raising of the bark so that the cut is T shaped, then taking hold of the cut corner of the bark with the point of the knife, raise the bark slightly, and inserting the handle of the knife between the bark and the wood, raise the bark on both sides sufficiently to allow the bud and its little shield of bark to be slipped in; then close over the cut edges of the bark and tie with tape or worsted thread, or perhaps better still, because not liable to contract or expand by change of weather, the *sopah* or strip of fibres obtained from the stem of a plantain tree. The proper season for budding is at any time when both the tree which yields the bud (the scion) and the tree which receives it (the stock) are growing freely. That is generally from June till February.

By regular practitioners a peculiar form of knife is used for budding; it has a blade which is sharpened at the point from the edge to the back of the blade, so as to cut with the end of the blade when making

the slits in the bark of the stock, and a handle of bone or ivory, very thin at the end, to raise the bark with. If such a knife is not at hand, a sharp penknife and a small paper-cutter make good substitutes.

Grafting

Consists of causing a twig of one tree to adhere to, and grow on, another, that is closely related to it. The essential part is to cut the scion and stock so that the inner bark of both may be brought together, because it is at this point that union takes place. The proper season for grafting is immediately before fresh growth takes place, now, as many trees in this country have two growing seasons, a rainy season and a hot season growth, it is preferable to graft near the middle of the rains ; but this question can only be answered decisively on examination of the individual tree to be worked upon. The scion must be of firm, well ripened wood, with dormant, but plump buds, and the stock must be ready to start into growth ; this condition may be known by the buds swelling. The most generally useful form of graft is that known as the tongue graft ; it is made as follows :—If your stock and scion are nearly the same size, cut off the head of the stock, then cut it down near the centre for about 1 inch or more in proportion to its size, take a slice from the outside of one of the halves, working the knife gradually inwards so as to leave

the tongue with the end as thin as possible, make exactly the same cuts on the scion, and the two parts should then fit together accurately, and must immediately be bound together with *sopat* or tape, and the union covered with well tempered clay, or grafting wax; it is a good plan to give the whole of the scion a slight coating of wax, as by excluding the air the wax keeps the scion moist and fresh.

Grafting Wax.

A wax that the author has lately found to be specially adapted to this climate and easily prepared, is composed of equal parts by weight of rosin, bees'-wax, lard, and turpentine melted together over a slow fire; when required for use the wax should be heated, by a waterbath in the way that glue is heated, and applied to the graft by a little brush; when used the wax should not be hotter than the hand can bear.

Inarching

Is bringing two living trees together and causing a union by cutting a portion of the wood and bark from each so that the inner bark of both can be made to touch accurately: the two wounded surfaces are then tied together and clay applied to keep out air. This operation can be performed at any season, but is most successful when the trees are in vigorous growth. It is by this means that the famous Mazagon mangoes are propagated.

Propagation by Layering.

"Layering is an operation by which a portion of a plant is made to give roots, so that it can ultimately be cut off and treated as an ordinary plant. If the branch to be layered can be brought down to the ground, a slit should be cut at the firmest part that can be made to touch the ground by inserting the knife at the lower side and cutting nearly to the centre of the branch, drawing the knife towards the end of the branch about an inch or more. A small stone should be placed in the slit and the cut portion covered with sand or powdered bricks. A good sized stone should then be put on the part to keep all steady, and water supplied regularly as the soil gets dry. It is obvious that in many cases where the branch cannot be brought down to the soil, the soil may be taken to the branch either by fixing a potful of soil on a stage, or by tying the soil round the branch with sackcloth; in this case it is advisable to suspend a small *chatty* from which water may drip so as to keep the soil moist.

Pruning

Is the art of removing certain portions of plants, with a view to symmetry or the production of more and superior fruits or flowers. It consists of two distinct operations,—the cutting out of branches that

have reached a considerable size, and the removal of the point of growing shoots. The first operation should be performed only when the tree has nearly finished its growth for the season, because at this time the sap is not rushing upwards so rapidly as it is at other times, and the wound heals rapidly. If a branch is cut off a short time before the tree begins to grow, probably a large quantity of sap will escape at the still fresh wound, and the tree will be greatly weakened by the loss. This is technically called bleeding. The second operation, cutting out the points of growing shoots, may be performed when the plant is in full growth. This system is suitable for keeping herbaceous or soft-wooded plants symmetrical. Of special pruning, notes are made when treating of the plants which require it.

Transplanting.

For successful transplanting the essential conditions are that the exhalation of moisture from the leaves be kept as low as possible while the roots are in a condition fit to furnish their usual supply; for this reason, if trees are of a deciduous character, they may be transplanted with most safety when the leaves have fallen. Exhalation of moisture from the leaves of plants goes on most rapidly when the atmosphere

is dry and the sky cloudless; therefore for plants in foliage, if the transplanting cannot be done in moist cloudy weather, these conditions should be secured by shade and frequent sprinkling with water. If possible all plants should be transplanted with a mass of soil about the roots, which should be disturbed as little as possible; but some plants which have large woody roots and few fibrous roots near the stem, such as rose trees that have been growing for a number of years in the same place, it is of little use lifting a ball of soil with the plant; it should be dug out carefully keeping the roots as entire as possible, carried to its new site, where the hole should have been prepared at least twice as large as the roots require; when the tree is placed in the hole it is of importance that the roots be kept in their natural positions and not twisted or bent in any way; if any roots have been broken they should be cut off with sharp knife and the soil carefully placed among the roots so that all the interstices may be completely filled; as the filling up progresses, the soil should be trodden thoroughly at short intervals so as to make it very firm throughout the whole mass. The author has transplanted many large trees successfully, and considers the last point of especial importance and requiring unremitting attention! When such repeated treading is necessary it is obvious that wet soil is not suited for the purpose.

Manure should never be placed immediately on the roots of a plant; some fine soil should be placed on the roots first, then manure may be put in and covered with soil.

NOXIOUS INSECTS AND PESTS.

A SMALL red beetle which abounds in July and August is very destructive to crops of the cabbage and cucumber tribes. Catching them by hand early in the morning is the most effectual means of destroying them. They are to be found on the under side of the leaves, and during the early morning are sluggish, but become active as the day progresses.

Locusts

May be kept off by burning a smouldering fire of tar and green twigs of the milk bush to windward of the plantation to be protected.

White-Ants

Do considerable mischief by eating the stakes used to train plants. Soaking the stakes in hot tar as far as they are intended to go into the ground will prevent their attacks; this plan is better than applying the tar with a brush, as if a little crevice is left the ants will find it and get underneath the coating of tar. As the ant-hills are unsightly in a garden they

should be dug out until the queen ant is found. Sometimes if the hill is large, several queens may be found. If the ground is dug over frequently, there is little danger of them settling again. Ant-hill soil is a very good manure.

Scale.

Under this name are included several species of insects that adhere to the bark of trees or to the under sides of leaves. They in some degree resemble small shells adhering to the bark and vary in colour from white to brown, in shape from nearly flat to hemispherical. Cut off and burn as many branches and leaves as can be done without injury to the plant, then pick the scale off the remainder with a pointed stick. In the case of roses, which they particularly affect, if near the pruning season, cut well in and cover the stem and branches with a mixture of bullock's dung, soil, and water made into a thick paste. After a time this can be removed, and the bark will be found quite clean.

Green Fly

Is a little green or brownish insect, which is to be found in myriads on the tender shoots of rose trees and other plants at certain seasons. Washing with water kills them.

Thrips.

A minute black insect that by eating the cuticle produces white blotches on leaves. Crowding the plants near bungalows encourages this pest, and repeated washing with water destroys it.

Mealy Bug.

A white mealy insect that sometimes propagates itself with great rapidity and is very unsightly; repeated washing with water from a syringe or a jet that can be applied with some force will destroy it.

Caterpillars

Of many species are garden pests; one little sort that attacks rose trees and eats the epidermis of the leaves, so that skeleton leaves only are left, sometimes appears in great numbers; cutting off and burning the infected branches is the best cure; when that is not advisable an infusion of tobacco sprinkled over the plant frequently will prevent their attacks from making progress.

Crows.

In the vicinity of large towns it is often necessary to protect seed beds from crows by stretching a net over the bed, and I have seen a crow tearing a plant to pieces without any apparent object; but as a rule they do very little mischief, and the feathered tribes generally are the cultivator's friends.

Rats and Bandycoots

Being very fond of the roots of Gesneras and of several bulbs, often commit great havoc by digging them up. Poison and traps will give the cultivator the poor satisfaction of revenge, and may reduce the number of the enemy. Cats will have the same effect, but at a cost in mischief equal to the value of the benefit. Nothing short of a complete wire cage to keep roots that are at rest in seems practicable.

Boring Insects.

There are many species of insects that do injury to trees by boring into them. Filling their holes up with coal-tar is the best remedy that is known.

VEGETABLES.

Artichoke (the Globe Artichoke)

YNARIA scolymus thrives in this country in the plains only as an ornamental plant, as the stem usually dies before the flower head is developed. As an ornamental plant there are few more beautiful. The silvery whiteness of its graceful leaves renders it a very striking object, especially when planted in a small bed by itself. It requires a soil worked about two feet deep, plenty of horned cattle manure and water. Sow the seed in June in a pot or a bed of fine soil and plant in its permanent quarters when about a foot high.

Artichoke (the Jerusalem Artichoke)

Is commonly cultivated, and thrives well in this country. If grown from seed, sow at the beginning of the rainy season in a bed with good drainage. The first season the roots will be small; leave them in the bed and stop watering after the stems die down. At the beginning of next rains, transplant the roots into beds, allowing one square foot of ground for each root. Water freely while growing. Roots are generally procurable in market gardens near cantonments; when they can be purchased, it saves a year's work.

Asparagus

Can be grown in this country, but it is seldom that a suitable situation can be found, therefore it is seldom seen in good condition. It requires a very deep moist soil impregnated with salt and to be watered very freely. Prepare a bed by digging two feet deep, put in a good layer of manure, night-soil, or horse litter. Put in one foot of soil and more manure. Make up with finely pulverised soil and manure. Sow the seed thinly in lines one foot apart. Water freely, using salt water occasionally.

Basil (Ocymum Basilicum)

Is a sacred plant of the Hindoos, and is cultivated near every temple. It springs up wild in almost

every garden. Native names are—Marathee and Hindee, Kala toolsee; Bengalee, Babooitoolsee; Sindi, Nazbo.

Balm

When brought from hill stations and planted in any good garden soil, grows freely for a time but soon dies out, as a hot climate is unsuited to it.

Brussels Sprouts.

The sprouts are the little shoots which spring from the sides of the stem of the plant. It is a very delicate vegetable and thrives well in this country. Its treatment is the same as for cauliflower (see page 35.)

Bean, Kidney.

The kidney bean is said to be a native of India; but, like all plants that have been cultivated for many years, must be altered in its appearance, and is hard to trace to its original parent. However, its cultivation in this country is easy and profitable. Let the ground be well worked and laid out in beds three feet broad and nine long. The seed should be sown in two rows one foot apart and the seed three inches apart in the rows. After the plants are up a few inches, put in stakes for them to climb on. Water freely about once in four days during dry weather.

Sow at any time from the beginning of the rains till the end of the cold weather. To secure a constant supply, sow fortnightly.

Bean, Scarlet Runner.

The scarlet runner bean is a native of South America, and, like many other plants from that country, grows and flowers well in this climate, but rarely produces seed; therefore its cultivation is not profitable.

Bean, Broad or Windsor,

Is not a profitable crop in this country. The plants grow and flower well, and by topping as soon as the flower are open, a few pods may be gathered; but they are not worth the labour.

Beet

Is easily managed, and can be produced in very good condition. The soil must be well worked to a depth of 18 inches, and the manure applied at that depth; then laid out in beds fit for irrigation. The seed should be sown about an inch deep, in lines fifteen inches apart, and the plants thinned to 9 inches apart in the row. Water once a week in dry weather, and add a small quantity of urine to the water as often as practicable.

The time for sowing extends from the beginning to the end of the rains, and seed should be put down at intervals of about 15 days during that time. The young plants are frequently attacked by insects during the rains. Watering with salt water enables the plant to resist their attacks, and as beet is a native of the sea-shore of Southern Europe, a small quantity of salt in the water, or salt fish for manure, increases its growth. Beet is often transplanted, but the best roots are produced when it is allowed to remain where it is sown; fresh manure is injurious.

Borage.

The borage of Europe (*Borago officinalis*) being a cold country plant, it is seldom grown in this country satisfactorily. We have an excellent substitute in one of the dead nettle family, named *Coleus aromaticus*, a low-growing plant of a pale green colour, with thick hoary opposite leaves and the smell Borage (native name ajwan). It grows freely from cuttings in any common garden soil.

Borecole, or Kale,

Is a vegetable suited to very cold climates, and therefore is of little use in this country.

Brocoli

Is easily cultivated and can be grown to great perfection in this country. The soil must be well work-

ed two feet deep, and if not particularly rich, a good supply of manure should be given. Dung of the horned cattle is best, but night-soil that has been buried in a pit for some time is excellent. Only the white varieties should be grown, as the purple sorts do not yield so freely. The ground should be laid out in beds for irrigation.

Sowing may be done at any time during the rains, but the danger of the plants being eaten up by insects that abound during July and August, makes it advisable to defer sowing till the beginning of September. The seed should be sown thinly on a bed of finely prepared soil, and when a few inches high, transplanted to their permanent quarters, where they should be planted about 30 inches apart. Water should be given freely about once in four days during dry weather.

Cabbage

The large supply of cabbage to be found in our bazaars during the cold and hot seasons, proves that its cultivation in this country is no difficult matter. The seed of both early and late varieties should be sown at intervals of a month from the beginning of the rains till the end of December. The early sown crops will probably suffer a good deal from insects, but this is not always the case. A timely shower of

rain often destroys the enemies of the cabbage, and should they escape the season will extend from September to May. Watering the plants overhead with salt water often keeps their insect-enemies in check; but this course can only be pursued in case the soil naturally contains very little salt.

A good rich soil is required for cabbage, therefore a liberal supply of manure is necessary; dung of horned cattle is the best; but if plenty of water is available, night-soil is an excellent manure. The idea that night-soil gives cabbage a disagreeable flavour is not founded on scientific enquiry. Some of the strong growing kinds, if very liberally supplied with manure of any kind, grow very rank, and in this case have a strong flavour.

In transplanting cabbage plants from the seed bed, considerably more care is required in this country than in Europe. The seed should be sown thinly in lines six inches apart, so that the plants may be taken up with some soil about the roots. In planting out in the beds, they should be placed from 20 to 30 inches apart each way,—the former measure for the early and the latter for the late sorts.

Capsicum.

The capsicum is an annual plant and is very easily grown. The seed should be sown at the beginning

of the rains in beds, and when a few inches high, the plants should be removed to their permanent quarters, where they should be planted 18 inches apart.

To obtain very large capsicums, pick off a few of the first flowers ; this is intended to let the plant gather strength. When more flowers appear, select one only to each of the principal shoots of the plant, pick off the remainder and all that appear afterwards. Feed the plant with weak liquid manure about once a week when the weather is dry, and pinch out the ends of the shoots occasionally. Too frequent watering causes the roots to rot.

Chilie.

The common chilie should be treated like capsicums, but as large size is not an object, the flowers should not be picked off.

Chilie (Nepaul Pepper).

The Nepaul pepper chilie is a yellow fruited variety of superior flavour.

Cayenne Pepper.

The bird pepper chilie plant, from which Cayenne pepper is made, forms a shrub of some years' growth. The fruit is the smallest of the group and of exceeding pungency. It grows freely in any good soil, and enjoys lime rubbish as manure.

Carrot.

The carrot may be grown in the Deccan and like districts, where the rainfall is not over 25 inches annually during the rainy season; but the best flavoured roots are procured from sowings made during the cold season. It is better to have the ground for carrots manured the year previous and well turned up some time before sowing. The seed should be sown in lines eight inches apart, and the young plants thinned out about two inches apart. During the rains occasional slight watering is required if the weather prove dry; but during the cold season, water should be given once a week.

Cauliflower.

This delicate vegetable can be grown in this country with great success; but ordinary garden soils are rarely rich enough to grow good heads, and a large supply of manure at the time of planting seldom effects the purpose properly. Heavy manuring with dung of horned cattle should be given to the previous crop, the ground kept well worked and clean. When the preceding crop is removed, dig eighteen inches deep and add more manure. The seed may be sown at any time from June to September. The seed-bed must be well manured with old manure, and the seed sown thinly in drills 6 inches apart. When the plants

have made a few leaves, lift carefully with a trowel and transplant to the permanent quarters that have been prepared as above. Plant thirty inches apart. When established and growing freely, give liquid manure (see page 12) at every alternate watering.

Celery

Is found wild in ditches in some parts of England. It is easily cultivated in this country, and very fine stalks can be grown, but it is very rarely to be seen in the markets in a condition fit for table. A well drained soil is of the first importance. It should be dug 18 inches deep, and a heavy coating of manure turned in. If the soil is of a thoroughly good draining quality, trenches should be dug 12 inches deep, the same wide, and manure dug in at the bottom of the trenches.

The seed should be sown about the beginning of the rains, in lines six inches apart, on a bed of rich friable soil, and when grown about 4 inches, carefully transplant into the bottom of the trenches. The young plants should be watered gently at first, but after the plants have begun to grow, give water freely every three days, adding liquid manure at every alternate watering. When the plants have grown about 18 inches high, fill up the trenches with soil as high as the base of the leaves; this will form trenches

between the rows; the water should be turned into these new trenches and considerably reduced in quantity.

The object of filling up these trenches with soil is to blanch the leaf stalks to render them white and crisp.

If the situation is subject to a heavy rainfall, it is better to dispense with trenches and put the young plants in beds, using drain pipes and straw to effect the blanching process. The essential part is to keep out the light.

Cress (Water).

Water cress is easily grown if water impregnated with oxide of iron be available.

A shallow pond should be made on the bank of a stream, with an arrangement to let the water pass through the pond when not in flood. Seedlings should be procured from some established habitat, of which there are many on the hills throughout this country.

Cress.

Garden cress should be sown thickly in lines on a bed of rich friable soil. To secure a succession in good condition, sow a small quantity every three days. Shade from bright sunshine increases the rapidity and delicacy of its growth. Water should be given in small quantities daily.

Cucumber.

As the cucumber is a native of hot countries and is perfectly at home in India, very little labour is necessary to produce such fruit as only the rich enjoy in Europe, where at great expense an artificial climate is produced by the aid of glass houses. To produce very fine cucumber, the soil should be well manured the year previous; if this has not been done, use well rotted manure, and stir the soil thoroughly to the depth of a foot. Sow the seed at any time between June and December, in lines 3 feet apart, and thin out till the plants are eight inches apart in the line. Water twice a week in dry weather, and add liquid manure to the water occasionally.

Egg Plant,

The English name of *Solanum melongena*, is very apt when applied to the varieties resembling eggs that are grown as ornaments in European hot houses, but seems rather misplaced when applied to the vegetable commonly called 'brinjal' or 'benguin' in this country, the 'aubergine' of the French. The brinjal is a favourite vegetable in use amongst all classes in this country, and is in season throughout a great part of the year. There are many varieties, distinguished by the shape and colour of the fruit, which ranges from white, through yellow and red,

to the very darkest purple, with all the intermediate shades. In shape some resemble cucumbers and others melons. The seed may be sown in a bed of well prepared soil at any time throughout the year, but is most successful during the rains. When a few inches high, the young plants should be planted out eighteen inches apart on land prepared for irrigation and heavily manured. After the fruit is formed, heavy doses of liquid manure should be applied, mixed with the irrigation water at every alternate watering. Water should be given about once a week during dry weather.

Dandelion (Taraxicum dens-leonis),

As a salad, might be used with great medicinal benefit in this country. Its cultivation is simple and inexpensive. Sow the seed at the beginning of the rains, in lines 8 inches apart, on a bed of light rich soil, slightly shaded from midday sunshine. Water gently every three days during dry weather until the young plants have made several leaves, afterwards water once a week. Thin out the plants in the lines to eight inches apart, and when well grown, raise the leaves off the ground slightly by placing dry gravel or such like underneath them, and cover with an inverted flower-pot. Only a few plants should be covered at a time. It may be got in good condition

nearly all the year round. The virtues of Dandelion as a medicine in affections of the liver have long been acknowledged. Several acres of this crop are yearly grown at Gunesh Khind for the supply of the Medical Department.

Gourds.

Growing monster gourds is a very interesting and profitable amusement, and as large fruit may be grown within the limits of a soldiers' garden as in any other. Procure several cart-loads of well rotted horse litter; if it is dry and hot, water it well, and lay it up in a heap to ferment; water the heap slightly daily, and at the end of a week, turn it over and water well again; continue watering and turning weekly for six weeks, by this time the heap will be greatly reduced in size, and should be quite cool and moist; dig the ground thoroughly a foot deep several times over in the meanwhile, and when the manure is ready, spread it on a foot thick and dig it in. About the middle of the rains plant several seeds in patches a few feet apart and water daily but slightly at first. As the plants begin to grow fast, water more plentifully but only every alternate day. Flowers will soon appear—pick off a few of the first to allow the plant to gain strength. In all the gourd tribe the male and female organs are in separate flowers, and it very often occurs that the flowers are all one sex on the same plant; by ex-

amining the flowers carefully it will be seen that some of them yield a quantity of fine yellow powder in the centre; these are male flowers, and this yellow powder, called pollen, must be carried to the female flower before fertilisation can take place. Very often insects perform this duty, but if no fruit is appearing, it must be done by hand. The female flowers are generally much more numerous than the male, and may be distinguished by the absence of the pollen. Procure a camel-hair pencil and apply it gently to the centre of the male flower; the pollen will adhere to the hairs; carry this to the female flower and apply it gently all over the little knob in the centre of the flower. When the fruit begins to form, pick off all other flowers that appear and the ends of the shoots. If any shoots appear nearer the root than the fruit is, cut them off entirely. Place some clean dry hay underneath the fruit and a shade over it to keep off the sunshine. By the time the plant withers up, the fruit should be a heavy load for a man.

Lettuce

Is one of the plants that have been so long cultivated that its native country is unknown. In this country it can be grown to the greatest possible perfection. Seed should be sown fortnightly from the beginning of the rains till the end of the cold season.

When the young plants are fit to handle, they should be planted on a bed of rich friable soil and watered slightly once a day during dry weather. If inclined to spread, tie the outer leaves together near the top; this will cause the plants to 'heart', to be tender and crisp. Lettuce must be grown rapidly.

Mint (Spearmint, Peppermint)

Are very easily grown from cuttings of the roots. Any common soil well drained will answer. Water freely.

Onion.

The onion is one of those blessings that Providence has furnished for man's use in almost all countries. It is cultivated with great success throughout India as well as in the cold countries of Europe.

For green onions the seed should be sown twice a month throughout the year. In the rainy season provide thorough drainage. During the hot season provide slight shade and protection from hot winds. In dry weather water slightly once a day. For ripe onions sow, in well prepared seed bed, in September, and when the plants are up a few inches, plant out 4 inches apart.

The ground must be laid out for irrigation and water given once a week in dry weather. For seed, plant well shaped ripe onions about the middle of the

rains. Night-soil is an excellent manure for onions; it may be used either fresh and mixed with the water for irrigation, or if decayed may be mixed with the soil previous to planting.

Pea.

The pea is one of the vegetables that are admitted to be universal favourites, and the ease with which they can be cultivated in this country is a matter for congratulation. Any rich friable soil that drains well and contains a good proportion of lime is well suited for pea cultivation. If lime is wanting in the soil, manure with bone dust or old mortar. It is much better to have the ground well manured for the previous crop; if this has not been done and old well decayed manure is not available, liquid manure must be the source of nourishment for the crop. The seed should be planted one inch deep in rows drawn in pairs one foot apart, four inches being left between each seed in the row. The interval between each pair should vary from 2 to 4 feet, according to the height the variety grows. The early varieties are generally dwarf and the late ones tall. When the plants are a few inches high, put in stakes for support.

The pea crop is very often injured by mildew, which comes on in force during dry weather. Frequent and thorough watering over head is a good preventa-

tive, and will cure it if the attack is not severe. The crop should be irrigated once in four days during dry weather.

Parsley.

This fine flavoured herb can be grown to perfection in a great part of India ; it requires a free sandy soil, and watering once a week when established. If the rainfall is over 50 inches annually, the beds should be raised so that the water may run off freely.

The Potatoe.

There is little difficulty in the cultivation of the potatoe in this country, but unfortunately the proportion of suitable soil is comparatively small. The presence of a considerable quantity of nitrogen-yielding vegetable matter is necessary ; this is produced in Europe, when not present in the soil naturally, by heavy dressings of farm-yard manure. In this country we find it naturally on the hills where forest has been recently cut down, and in such situation, if within a reasonable distance from a market, the grossest spoliation is constantly going on. A fresh piece of land is taken in hand, the brushwood cut down, the soil ploughed, and potatoes planted ; an excellent crop is taken the first year, the second year the same crop is planted with but indifferent results, for

a few years more it may yield barely sufficient to repay cultivation, then it is given up. Any soil that yields good crops of grain can be made to grow potatoes by manuring heavily with stable litter and bullocks' dung. The soil should be turned up well and laid out in ridges 15 inches high, a heavy dressing of manure laid between the ridges. A small quantity of soil put on the top of the manure, the potatoe sets planted one foot apart, and the soil levelled down will leave the sets about three inches below the surface. When they have grown about six inches draw the soil from between the lines up to the plants.

In dry weather irrigation once a week is necessary, and manure may be soaked in the irrigation water with advantage.

The planting season for gardens extends from the beginning to the end of the rains. If the rainfall is not over thirty inches, where the rainfall is greater it is necessary to defer planting till the greater part of the rainfall is over, and the system of planting must be modified somewhat by planting on the ridges instead of in trenches. Well ripened potatoes must be used for seed. It is easy to distinguish a ripe potatoe; it has a thick tough skin and begins to sprout freely when its growing season comes on. For 'sets' the potatoe should be cut into pieces containing not more than two eyes each.

If the seed potatoes are small it is better to keep them whole, and to cut out the eyes till only two remain.

Pot Herbs.

The following list of pot herbs and plants used in domestic economy, are of easy cultivation in any good garden soil that is kept in a moderately moist condition during dry weather :—

Propagated by seeds.

Basil, Marigold, Parsley.

By cuttings.

Rue, Lavender, Rosemary, Sage, Wormwood.

By division of the roots.

Marjoram, Peppermint, Spearmint, Thyme.

Radish (Europe).

The European varieties of radish can be grown in this country with great success. The seed should be sown thinly on a bed of friable rich soil any time from the beginning of the rains till the end of the cold season. To keep up a succession, sow fortnightly. To be tender and crisp, radish should be grown rapidly; shade from the midday sun and daily watering will effect this.

Radish, (Country).

The country radish has larger roots and is not so delicate in flavour as the European varieties, but is much relished by some people. With a deep friable well manured soil they are easily grown. The seed should be sown at intervals of three weeks from the beginning of the rains till the end of the cold season. If the rainfall is heavy the beds must be raised to secure good drainage. During dry weather water freely every alternate day.

Spinach.

Round leaved spinach (*Spinacia oleracea*) can be cultivated with considerable success during the cold season. The seed should be sown in beds, and if the plants come up too thickly they should be cut out, as they are required for use, until they are about six inches apart. Frequent watering and liquid manure occasionally is necessary. For rainy season crop the spinach (country) is preferable.

Spinach, Country.

This plant belongs to *Amaranthaceæ*, the family which gives us the Coxcomb of gardens, and is not closely related to the preceding. It, however, forms an excellent substitute for it on the table, and is in constant use by all classes when in season. Any good

garden soil that has been well manured and worked will grow this spinach well. It should be sown thinly on beds in a well sheltered situation, and watered freely. To keep up a succession in good condition, it should be sown weekly. When required for use, take what is young and tender only.

Tomato.

If the popular character of the tomato as beneficial in affections of the liver, indigestion and diarrhœa is at all deserved, its cultivation in this country should be a great deal more extensive than it is; because, however mythical its virtues as a medicine may be, regarding its use as a salad and in sauce there can scarcely be two opinions.

By a little attention to the times of sowing, tomatoes may be had in good condition throughout the year. Any fair garden soil is suitable, provided water drains from it freely. Sowings should be made in seed beds once monthly, and when a few inches high, the young plants put out in lines three feet apart. The plants one foot apart in the line in dry weather. Water freely twice a week, giving liquid manure at short intervals. When the plants have begun to grow, put in stakes and train the plants over them, tieing them here and there slightly to give support. During the hot season, select a place for planting that is shaded at midday.

Turnips.

The small varieties of turnips can be grown in this country with considerable success during the cold season. The ravages of caterpillars and other insects are a serious obstacle to their cultivation during the rainy season, therefore it is advisable to defer sowing till the rains are well over. This is imperative where the rainfall is equal to fifty inches annually. A rich and friable soil is required. The seed should be sown in lines six inches apart, and the plants thinned out gradually as they increase in size. Dusting with fine ashes and repeated watering over head are the best means for keeping the insect enemies in check.

ANNUAL AND BIENNIAL FLOWERING PLANTS.

Aster.

HE China Aster is one of our finest garden flowers, and is of easy cultivation. The seed may be sown on a bed of fine rich mould or in a pot, any time from May till November. When the young plants are a few inches high, transplant carefully to the place they are intended to flower in, where, if planted alone, they should be about eight inches apart. The tallest kinds in the centre of the bed, or if the path goes on one side only, farthest from the

eye. Asters and dwarf Coxcombs harmonise well, and they may be planted alternately.

Antirrhinum or Snapdragon.

Among the fine varieties of Antirrhinum are some of the richest shades of colour it is possible to conceive, the hues varying from the purest white to the darkest crimson. Seed should be sown near the beginning of the rains, and the young plants moved to their flowering station when a few inches high. This plant has delicate roots and dislikes fresh manure very much. Old well decayed manure should be thoroughly mixed with the soil. The plant is most vigorous and yields the best flowers during the cold season. A little white Candy-tuft sown between the plants of Antirrhinum has a good effect.

Balsam, Impatiens balsamina,

Is perfectly at home in this country, many species being found wild on the hills; and no plant repays the cultivator with a greater wealth of bloom during its short life. A very rich open soil is necessary both for the seed bed and its permanent quarters. Well rotted leaf mould is the best manure; if that is not available, old cowdung may be used, as frequent watering is necessary. If the soil is of a retentive nature, a mixture of sand, broken bricks, old coir matting, or anything that will prevent the soil from

becoming compact, should be mixed with it. The seed should be sown any time during the rains, in lines six inches apart; the seed being dropped in separately about three inches apart. When the young plants have grown a few inches, they can be moved with a good ball of earth and planted in their permanent quarters. When they have begun to grow, frequent doses of liquid manure improve the size of the blooms. Some varieties are much inclined to branch so much, that the bloom is hidden to a great extent in a mass of foliage; to prevent this, pinch out the greater part of the side shoots, but leave a few at regular distances apart.

Candy-tuft (Iberis umbellata) and Sweet-Scented Candy-tuft (Iberis odorata)

Are favourite garden flowers and may be cultivated in this country with considerable success. They generally grow 8 to 10 inches high, and the flowers are white and purple. If sown near the end of the rains, they flower freely during the cold season. Candy-tuft sends down long tap roots, and in consequence is not easily transplanted, therefore they should be sown where they are required to flower, and be thinned out to a distance of three inches apart. A friable rich soil and watering freely once in three days, are necessary.

Convolvulus.

The varieties of *Convolvulus* yield some of the most beautiful tints that are to be found in nature. They are of easy culture. Sow in any good garden soil at the beginning of the rains if the rainfall is slight, or at the end if the rainfall is over 50 inches. Set twigs or strings for the plants to climb on, and water frequently with weak liquid manure.

Coxcomb.

At stations where the rainfall is under 40 inches, a rich bloom may be produced by the Coxcomb all through the rains. A rich friable soil and regular watering are necessary. Seed should be sown at intervals of about 15 days from the beginning of the rains, and the young plants put into their permanent quarters when a few leaves have been made. Great care must be taken to prevent crowding when in the seed box, as the plants get weakened and flower prematurely.

The Hollyhock.

The single varieties of Hollyhock grow and flower well in the parts of India that are not subject to a heavy rainfall. The seed should be sown in a seed bed at the beginning of the rainy season, and the plants moved to their flowering quarters towards the

end of the wet weather; they look best planted amongst shrubs, so that the lower part of the stem, which is often bare and unsightly, may be hidden. Double varieties may occasionally be got from seed, and must be propagated by cuttings containing a single eye. They are difficult to keep in the plains. A rich open soil and frequent doses of liquid manure, while growing freely, are necessary.

Mignonette.

This favourite sweet smelling plant is of easy cultivation in favourable circumstances. These are a deep friable rich soil, thoroughly well drained, and a moderate supply of water. The soil having been well worked at least a foot deep and manured with well rotted sweepings, the seed should be sown thinly where it is intended to bloom. Water regularly in dry weather, but take care that the soil does not become sodden from want of drainage.

Mimulus.

The varieties of *Mimulus* are very pretty when grown in shallow pans and placed in a shady place. Mix the seed with sand or ashes, and sow thinly in pots or shallow pans. Cover the seed very lightly with sand, and place the pots in saucers to supply water. When the plants are well up, they may be watered freely overhead.

Pansy, Hearts-ease, Viola tricolor.

By sowing the seed in pots about the middle of the rainy season, this interesting little plant can be had in flower about Christmas, and will continue flowering till February. After that time the plants become weak, and generally die during the hot season.

Phlox Drummondi.

For producing a rich mass of colour there is no plant more suitable than the *Phlox Drummondi*. The seed should be sown in pots, and when about four leaves have appeared, should be planted out where it is intended to bloom. A fresh sowing made every fortnight from the beginning till the end of the rainy season, will produce a constant supply of bloom. If the rainfall is over 40 inches, it is better to sow when the rains are nearly over.

Marigold, French.

This pretty annual thrives with but little care in this country. Sow in any good soil and transplant to the places they are intended to bloom. when about two inches high.

Marigold, African.

The African Marigold is a great favourite with native ladies. The plant grows freely in any good rich

soil, freely watered; to produce large flowers, it is necessary to pinch out a great part of the flower buds.

Pinks, Dianthus Chinensis.

If the seed is sown about the middle of the wet season where the rainfall amounts to 40 inches, but later where the rainfall is greater, and the young plants put out in a bed of friable rich soil, a rich bloom may be expected during the cold season. If the rainfall is heavy, the young plants must be carefully protected from excessive wet; even a very moist atmosphere will cause them to damp off.

Portulaca.

During the time the flowers are open, few plants have as bright an effect as the varieties of *Portulaca*; they thrive much better during cool weather. The seed should be sown about the middle of the rainy season if the rainfall is not over 40 inches; if greater, sow when the rains are over, on the spot they are intended to bloom in, or in pots. The seed should be first mixed with sand to assist its regular distribution over the bed. It is a good plan to water the bed well before sowing, and afterwards cover it with a mat during the day until the young plants have appeared above ground.

Lobelia erinus.

This pretty little plant blooms freely from December to February. It should be sown about the middle of the rainy season if the rainfall is under 30 inches; if over that quantity, sowing must be deferred till the rains are over. The seed is very minute and should be mixed with ashes before sowing, so as to allow its being regularly distributed. Seed boxes or pots should be prepared by laying a good quantity of potsherds at the bottom for drainage, covering with rough soil or half-decayed leaves, and filling with fine soil containing a good proportion of leaf mould and sand. Water very carefully with a fine rose watering-pot and place the seed box in a shady place, until the plants are well up; then inure gradually to bright sunshine. Unless the seed has been very thinly sown, it will be necessary to put the young plants into other boxes or pots. Five plants will be sufficient for a pot 12 inches wide at the mouth.

Zinnia elegans

Has become almost a weed in many gardens in this country. If the rainfall is under 40 inches, no particular care is required to grow it; if the rainfall is greater, sow when the rains are nearly over. See that the soil is not over-rich, as it will induce luxu-

riant growth and single flowers. Seed can be saved easily, but that which is grown in Europe, where seed-growing is a distinct profession, yields flowers of much more brilliant and distinct colours.

FENCES.

NOTHING affects the appearance of a garden more than the condition of the fences, which must be of a neat and regular character, and by a proper selection of plants for the purpose, they may be made to form one of the chief graces of the garden. Where cattle are not grazing regularly, the ugly lines of prickly pear and milk bush that are so common are very objectionable. Some of the following plants make a perfectly efficient fence, while enlivening the scene with brilliant flowers.

DURANTA PLUMIERI, (*Malkangunee,*)

Makes a most beautiful fence, quite impenetrable to cattle. Its lovely blue flowers and little racemes of golden fruit are always interesting. It succeeds well in black soil on the Deccan.

LANTANA ACULEATA

Makes a very good fence in situations where the rainfall is over 50 inches. The shears require to be

used freely to keep it in order. Propagate by seed or cuttings.

Dodonea Burmanniana (*Maraṭhi, Zukmee*).

For situations where the soil is of a loose sandy nature and very dry, this plant makes an excellent fence. Propagate by seed.

Poinciana pulcherrima (small Goolmohr)

Make very beautiful fences, quite impenetrable to cattle if kept in decent order. Any good soil is suitable, and when once established, no watering is required. The flowers of Poinciana pulcherrima are of a rich brown and yellow. The fence should be trimmed after the flowering season is over. Propagate by seeds.

Hæmatoxylon Campechianum,

The Logwood Tree (*Patung*)

Makes an excellent fence and bears clipping well. It is suitable for a situation with a black soil and a rainfall not over 40 inches annually. Propagate by seed, which should be sown where the fence is required.

Vitex Negundo (The Chaste Tree)

Forms a beautiful fence in situations where the rainfall is over 50 inches yearly. Propagate from cuttings or seed.

Lawsonia alba (*Mendie*)

Is excellent for interior fencing, where it is not subject to depredations from cattle. Propagate by cuttings in any good garden soil.

Rose.

The common pink rose (Edouard) is also excellent for internal fencing. Propagate from cuttings. Soil must be rich and well drained, with a good supply of water.

Pomegranate.

The Pomegranate is a fine fence plant, suitable for a calcareous soil and a rainfall under 40 inches. Propagate by cuttings for the double and by seed for the common variety.

Bougainvillea spectabilis.

With a rich open soil, plenty of water and good drainage, this plant makes an exceedingly rich and impenetrable fence. A light trellis should first be made to train the plant on, and by the time the trellis has decayed, the plant will be strong enough to stand

alone. Propagate by layers, and plant six feet apart. Tie in the rampant shoot close to the trellis, and prune freely where too thick.

JATROPHA CURCAS (*Moglee Kerrendee*).

In situations with a heavy rainfall, this plant makes a good fence. The seeds yield a large proportion of oil fit for lamps. Propagate by seeds or cuttings.

CASUARINA MURICATA.

In a very sandy soil or any good soil of a very open friable nature and with a good supply of water, this tree makes an excellent fence if kept regularly cut in and trimmed. Propagate by seeds.

EUPHORBIA TIRICULLA (*the common milk bush; Native Name, Sher*),

Makes a stiff formal fence. The milky sap is very acrid. Propagate by cuttings.

PRICKLY-PEAR (*Native Name, Negadoung*) AND EUPHORBIA NERIFOLIA (*Native Name, Thor*),

Are excellent fence plants for Railways in dry situations.

AGAVE AMERICANA

Make good fences in moist situations if planted on an embankment, so that the roots have an open dry soil to grow in. Propagate by offshoots.

PARKINSONIA ACULEATA,

A very handsome small tree that grows freely in the Deccan; will make an excellent fence; it is grown from seeds.

EDGINGS.

IF sufficient water is procurable, an edging of some dwarf-growing plant is much to be preferred to one of tiles or such like. The following plants are suitable for such works; they should be trimmed in May and December. In positions where water is scarce or has to be carried to the garden, it is generally advisable to make edgings of bricks, tiles, or such like. A native imitation of the European edging tile is coming into use, and is a great improvement on the rows of bottles that are often to be seen. Common bricks and tiles set on end make a fair edging if nothing more artistic is procurable, but the prettiest edging of this kind is made of irregular pieces of a white crystalline stone that is plentiful in some parts of the country, called by the natives ghar.

ALTERNANTHERA AMABILIS.

This plant, though lately introduced, is already established as one of the most beautiful edgings. Its brilliant crimson colour and dwarf habit render it

particularly striking. A rich sandy soil, thorough drainage, and a free supply of water are necessary. Propagate from cuttings put in at any season.

JUSTICIA GENDARUSSA (*Native Name, Tew*).

A dwarf plant, with willow-like leaves; forms an excellent edging, prefers a heavy rainfall. Propagate by cuttings planted during the rains.

PARADANTHUS TITHYMALOIDES (*Walaytee Sher*)

Is in very common use as an edging. It has an advantage in growing in any garden soil that is open and friable, requiring no watering after it is once established. A very prettily variegated variety was found at Ganesh Khind in 1870. When it has become more plentiful, it will make a very striking edging.

PLUMBAGO CAPENSIS (*Native Name, Chitrak*).

This plant, by frequent clipping, may be brought into a dense form, and is very well suited for edging wide roads. Propagate by cuttings of ripe wood. It thrives best at an altitude of over 2,000 feet above the sea.

The Tom Thumb Geranium

Makes an excellent edging for wide paths; requires a rich well drained soil. Propagate by cuttings. A rainfall over 50 inches is injurious.

The Miniature China Roses

Make a beautiful edging, as they bear clipping well and flower nearly all the year round. Any rich open soil well drained is suitable. Cuttings should be planted in a shady spot during the cold season, and transplanted to their permanent quarters at the beginning of the rainy season if the rainfall is slight, or at the end if the fall is over 50 inches annually.

CHOICE FLOWERING SHRUBS.

Abutilon striatum.

N elegant shrub, having bell-shaped flowers, orange coloured, with brown streaks. Propagate by cuttings.

Allamanda grandiflora.

A lax-growing shrub, with leaves in whirls and large bright yellow flowers of great substance. Thrives in any good garden soil well drained and watered freely. Propagate by layers and cuttings.

ALLAMANDA SCHOTTI

AND ALLAMANDA NERIFOLIA

Are hardy shrubs producing bright yellow flowers.

ARTABOTRYS ODERATISSIMUS.

Handsome semi-climbing shrub, with very fragrant flowers of a dull lemon colour. Propagate by layers.

ASCLEPIAS CURASSAVICA.

A small shrub with willow-like leaves and elegant flowers, part yellow and part maroon colour. Raised from seeds or cuttings.

BARLERIA.

A genus of small shrubs yielding beautiful flowers of a rather fugaceous character, and many tints of colour, from white to rose and blue.

BAUHINIA TOMENTOSA.

A small shrub of upright growth, bi-lobed leaves and large flowers of a pale orange colour. Raised from seeds.

COFFEE ARABICA (THE COFFEE TREE).

A beautiful shrub with many dark green leaves and white flowers, produced in great profusion.

Dalechampia Roezleana rosea.

A small climbing delicate shrub, producing small flowers with beautiful rose-coloured bracts.

Duranta Ellisii.

An elegant shrub, producing small blue flowers and racemes of yellow berries. Propagate from seed.

Eranthemum nervosum.

A small shrub with bright blue flowers. Propagate by cuttings.

Euphorbia splendens.

A small spreading thorny shrub, giving bright scarlet flowers. Propagate by cuttings.

Gardenia florida.

A very small shrub, with dark green foliage and white very fragrant flowers. Propagate by cuttings.

Heliotropium Peruvianum.

An under-shrub, much valued for the perfume of its lilac flowers; grows to great perfection on the hills. Fences of it may be seen on the Neilgherries, but in the plains it has quite a struggle for life. May be raised from seeds or cuttings.

Hibiscus.

A genus having a large number of very ornamental shrubs, called by natives Jassoondee. Propagated easily by cuttings.

Holmskoldia sanguinea.

A shrub of lax growth with small dull red flowers. Propagate by cuttings.

Ipomea purpurea.

A very beautiful shrub, which will climb if support is given to it, but is better left without. Flowers, bright purple. Propagate by seeds. Native of the Deccan.

Ixora coccinea.

A small shrub, native of the Concan. Flowers, bright red. Propagate by layers and division.

Jasminum grandiflorum.

Beautiful shrub, can be kept neat if cut regularly in the hot season. Flowers small, pure white, fragrant.

Jatropha multifida.

A very elegant shrub, leaves palmately cut, flowers scarlet.

LAGERSTROMIA INDICA.

A very beautiful shrub, with rosy lilac flowers. Produced in great profusion from May till July. Propagate from cuttings.

MALPIGIA COCCIFERA.

A very pretty little shrub with small spinous leaves and rosy flowers; produced from June to January.

MYRTUS COMMUNIS (THE MYRTLE).

There is a large and a small leaved variety. Propagated by cuttings and seeds.

MURRAYA EXOTICA.

A graceful shrub, yielding white flowers, with an agreeable perfume. Propagate by cuttings.

NERIUM OBESUM.

A rare shrub, with a very stout stem, producing beautiful rose-coloured flowers during the hot season. Propagate by seed. Requires a soil composed of one-half broken pots or bricks and one-half soil.

PENTAS CARNEA.

A pretty under-shrub with lavender coloured flowers; grows freely in any good garden soil, and may be propagated by cuttings and seeds.

Rondeletia punicea.

A small shrub of slow growth and reddish yellow flowers. Propagate by cuttings under a bell glass or layers.

Roupellia grata.

A shrub of straggling growth, suitable for training on a wall ; flowers large rosy white, very beautiful. Propagated by cuttings.

Russelia juncea.

An elegant shrub with rush-like stems and brilliant scarlet flowers, produced throughout the year. Propagated by cuttings or division.

Russelia floribunda.

Has scarlet flowers ; produced in dense spikes during the cold season.

Tabernæmontana coronaria.

A very beautiful shrub with dark green leaves and pure white flowers ; produced in great profusion all the year round. Propagate by layers.

Tecoma radicans.

A shrub of scrambling growth, suitable for training on a wall, with beautiful red flowers ; propagated by cuttings.

TECOMA STANS.

A very elegant shrub with graceful pinnate leaves and bright yellow flowers ; propagated from seeds.

PERISKIA GRANDIFLORA.

A scrambling shrub with formidable thorns and rosy flowers ; propagate by cuttings.

POINCIANA PULCHERRIMA.

A rapid growing shrub with small yellow flowers surrounded by large scarlet bracts, very magnificent during the cold season ; propagate by cuttings of ripe wood.

YUCCA GLORIOSA.

A magnificent aloe-like plant with a large spike of beautiful creamy white flowers produced during the rains ; propagate by offshoots or by the large heads cut off during the cold season : requires a very rich soil to bring it to perfection.

CHOICE BULBOUS AND TUBEROUS ROOTED PLANTS.

ACHIMINES.

HE species of Achimines are delicate tuberous rooted pot plants that thrive well in a very open rich soil with free watering and slight shade during the growing season. Some time after flowering the stems dry up ; at this time gradually discon-

tinue watering and keep the pots in a dry shady place till next growing season. When the rains come, give a little water, and as the plants begin to grow, re-pot, dividing the roots. The flowers are of many rich shades, between blue and red.

Alocasia metallica.

A very beautiful pot plant belonging to the Arum family, distinguished by oblong salver-shaped leaves of a dark green colour and with a bright metallic lustre. It thrives in a soil containing a good proportion of leaf mould with a little sand. Like all Arums, it requires abundant watering while growing, but during the hot season it should be watered but slightly.

Alpinia nutens.

A large growing herbaceous plant bearing drooping racemes of rosy flowers. It enjoys a moist very rich soil, and is propagated by division.

Begonia.

The ornamental foliage varieties of Begonias are herbaceous plants with very beautiful leaves. They require a very porous rich soil and a free supply of water. Propagate by rooted offshoots or cuttings. Leaves kept moist under a bell glass on sand, develop buds from which they may be propagated. There is

another section called tuberous rooted, which gives very beautiful flowers. They die down at the end of the rains and should be kept dry till the succeeding rainy season comes on.

Caladiums.

Very showy herbaceous plants with large heart-shaped leaves, blotched and marked by many shades of red and white. They are best grown in pots with a soil composed largely of leaf-mould and sand. They should get abundance of water during the rainy season, but towards the end of the cold season, allowed to go to rest till the rains come again. When at rest, no water should be given.

Canna.

The many varieties of this genus are very ornamental. Many of the varieties have large leaves, beautifully shaded with dark red. The flowers are of every tint, from yellow to crimson. A very rich soil, free exposure to the sun, and plenty of water, with thorough drainage, are necessary. They spread rapidly and may be propagated by dividing the roots.

Crinum.

A genus of the Amarylis family, yielding very fine flowers, mostly pure white, but a few have tints of red and purple. They flower during the rains, and

many are sweetly perfumed. They enjoy a very moist rich soil, and during the growing season require large supplies of water. Propagate by division of the roots.

Cyclamen persicum.

A small plant with very prettily marked leaves and small flowers of a delicate rose colour, shaped like a shuttlecock.

Eucharis Amazonica.

One of the most beautiful of the Amarylis family. The flowers are pure white and delicately perfumed. Requires a rich soil and plenty of water during its growing season, from June to January. In the dry season it should be permitted to dry to some extent, but never kept dust dry.

Gesnera.

The best varieties of Gesneras have large velvety leaves of many rich dark shades of colour. A compost of one-half loam, one-fourth leaf-mould, and one-fourth broken bricks or sand, is suitable for growing them. A moist shady situation and abundant watering during the growing season are necessary. When the ripe leaves touch the ground, buds are developed and young plants spring up. From these propagation is carried on.

GLORIOSA SUPERBA (METHONICA).

A very beautiful climbing lily, found wild on some of the Deccan hills and in the Concan. It grows freely in a soil containing a good supply of leaf-mould and sand, but is subject to attacks from a caterpillar, which eats off the head of the shoot just before flowering. It should be watered freely during the rainy season, but kept dry after the stems die down. Propagate by division of the tubers.

GLOXINEA.

A genus of very choice pot plants, belonging to Gesneraceæ, yielding large bell-shaped flowers of varied hues. A mixture of leaf-mould and sand, with good yellow loam, is required, with careful watering and protection from intense sunshine. The foliage dies down during the hot season, and but little water should be given at that time. Propagate by the young plants that spring up from the edges of the leaves when they touch the soil in a moist shady situation.

HÆMANTHES VIRESCENS.

A small bulbous plant, bearing large heads of crimson flowers on short upright stems, which appear in June before the leaves are above ground. It looks best in a pot. A rich well-drained soil and plenty of water when growing, but very little during the hot season, is the treatment it requires.

Hippeastrum.

(Star Lily, Amarylis.)

A genus of the Amarylis family, having large showy flowers of various shades of yellow and red,—mostly producing the flowers during the hot season, before the leaves appear. They grow freely in any good garden soil, and are propagated by division of the bulbs.

Maranta.

A genus of herbaceous plants with the leaves of many species variegated with red and purple. They require a rich soil, with an abundant supply of water during the growing season, and very little during the dry weather, when the leaves in a great measure dry up.

Musa superba.

Is often called the wild plantain, as it belongs to the same genus. It is a native of the ghauts, where during the rains it may be seen adorning the hill sides with its magnificent foliage. It may be raised from seeds, but it is better to procure bulbs from its native habitat. The bulbs may be taken up in April and will carry a great distance without loss. A rich soil and abundant watering during the rains are necessary. After the leaves dry up, no water should be given.

NELUMBIUM SPECIOSUM.

(NATIVE NAME, KUDAM.)

A very beautiful water lily. It grows freely in a tank with a muddy bottom and about two feet of water. Propagate by seeds and offshoots.

OXALIS.

A genus of lovely little plants with trefoil leaves resembling clover, flowers of many tints of rose, yellow and white. Any light rich soil, plenty of water during the rains, and none during the dry season. Propagate by separating the bulbs.

PARDANTHES CHINENSIS (LEOPARD FLOWER).

A pretty plant, with sword-shaped leaves and yellow flowers with dark spots. It flowers during the cold season and grows in any good garden soil.

POLIANTHES TUBEROSA (TUBEROSE).

Both the double and single varieties are very common. They grow in any good garden soil if well watered, and are propagated by dividing the bulbs.

ZEPHRYANTHES CARINATA.

A very beautiful little member of the Amarylis family. It has rose coloured flowers and grass-like leaves, about eight inches long. Grows in any good soil.

ZEPHRYANTHES TUBISPATHA.

A beautiful Amarylid with grass-like leaves and white crocus-like flowers.

THE ROSE.

Throughout the dry parts of India roses can be grown with very fair success, but on the sea-board, where the rain-fall is heavy, some extra care is required to prevent water lodging about the roots during the rainy season; and the moist condition of the atmosphere keeps the plants growing on without rest, and in consequence they are comparatively short-lived.

Soil.—A deep well-drained soil of a firm nature, such as the black soil of the Deccan, is well suited for roses. It should be enriched by a liberal supply of well-rotted bullock's dung or leaf mould.

Propagation.—Many varieties of roses strike freely from cuttings, and plants raised by that means are to be preferred for pot culture. The cuttings should be about four inches long, of well ripened wood, cut at the lower end close to an eye, and inserted about half their length in a pot or box containing a very sandy soil. Keep in a shady place and water slightly every alternate day. If well ripened wood can be procured, the season is not of much consequence, but generally speaking the cold season is the most favourable.

In the Deccan and other dry parts of India, where the common pink rose thrives freely, it is advisable to have roses budded on this stock, as it induces a vigorous habit of growth and the plants can be grown as standards without the use of stakes. Budding may be performed at any season while the stock is growing vigorously. (For particular instructions in budding, see pages 17—19.)

Pruning the Rose requires considerable knowledge of the various classes and often of the habit of particular varieties. In all kinds, weakly or malformed shoots or such as are decayed at the points, should be cut out from their origin and crowded branches thinned. In the Noisette class, which includes the yellow roses Lamarque and Solfaterre that are so common in this country, the weakly shoots should be cut out and the strong ones reduced by about a third of their length. The proper season for this operation is when the tree is at rest during April. As this class of rose flowers from short side-shoots, the ends of long rampant branches may be pinched off during the growing season with advantage.

The hybrid perpetual class of Roses, which includes many of the rich dark colours, is benefited by severe pruning during the season of rest in April or May. At this season all the branches should be cut in till within about four buds from their origin. As these roses

mostly flower at ends of strong shoots, these should be left intact until they have flowered, then a few of them should be cut back as before ; this prolongs the flowering season, but if too many are cut back, it will weaken the tree.

Tea-scented Roses are so varied in their habit, that almost every variety requires different treatment, yet it will serve our purpose to divide them into two classes,—the strong growing, such as Marechal Neil and Devoniensis, which should be treated as before detailed for Noisette roses ; and the moderate growing, such as Riene de Portugal, should have the shoots that have flowered cut back to within four buds of their base, and all weakly branches cut out from time to time during the growing season.

China Roses should have the branches that have flowered cut back several times during the growing season.

Bourbon Roses.—This class, which includes Souvenir de la Malmaison and several other general favourites, requires little pruning beyond taking off the ends of shoots that have flowered and cutting out such as are weakly.

Roses are often grown in pots and tubs placed on garden paths, and the result is deplorable. The extremes of drought and moisture that succeed each other at short intervals are very prejudicial, and the

constant watering that is required is a waste of labour. If it is necessary to keep roses in pots, they should be sunk into the ground till the rim of the pot is a little below the surface; by lifting the pot occasionally, the roots will be prevented from making their way into the surrounding earth.

ÆNOTHERA DRUMMONDII.

(THE EVENING PRIMROSE.)

A very beautiful creeping plant with large bright yellow flowers which open in the afternoon and close when the sun is well up next day. It lives several years, but as the plants get old, they become unsightly by having bare stems. Therefore it is better to raise a fresh stock from seed yearly. Sown at the beginning of the rains on a bed or pot of fine soil, and pricked out three inches apart, by the end of the season, they will be good sized plants, fit to move to their permanent quarters, where they will bloom well throughout the cold season. They are in bloom throughout the year.

VERBENA.

The garden Verbena is the result of crossing several South American species, and, as a garden flower, has few equals in producing a rich mass of bloom. Like many other garden plants in this climate, it becomes weakly after long continued propagation from cuttings, and a few seeds should be sown yearly to keep up the

vigour of the stock, and fresh cuttings struck yearly during the cold season. Cuttings strike root freely in a sandy soil shaded from bright sunshine; thorough drainage is necessary on this account. Its cultivation is seldom very successful where the rainfall is over 50 inches.

GERANIUMS (PROPERLY PELARGONIUMS).

Many varieties of Pelargoniums thrive well throughout the Deccan and the Mysore Country, while on the Neilgherries they form large bushes; but success is not generally met with in parts of the country where the rainfall is heavy. To grow Pelargoniums, the soil must be thoroughly well worked, turned over frequently, and enriched with decayed manure of any kind. Cuttings should be struck during the cold season in pots, and at the beginning of the rains planted out where they are to bloom. A few cuttings only should be put into each pot as, if the roots get broken, the plants do not take freely to their fresh quarters. Some of the kinds that grow lanky and straggling should be pruned freely during the cold season, and afterwards kept dry for a few weeks until they have thrown out fresh shoots. When they have made a second season's growth, it is better to take off the cuttings and throw out the old stump, as old age affects their vigour. Very good varieties may sometimes be obtained from seed, which may be sown at any time during the rains.

The Gladiolus.

Few garden flowers yield more satisfaction to their owners than this plant when grown in the dry parts of India. The bulbs may be procured any time from October to May, and should be planted at the beginning of the rains, four inches deep, in a very friable soil well enriched with rotten leaves and old manure of any kind. Water once in three days and give liquid manure once a week while growing freely until the flowers are all open ; tie the plants to neat stakes to prevent injury from storms. When the flowers are gone and the leaves begin to wither, leave off watering, and a month after dig up the bulbs and stow them away in a dry place till next planting season.

ORNAMENTAL FOLIAGE PLANTS.

Acalypha tricolor.

SHRUB of rapid growth. The leaves vary in parts, from a dull brown to a bright red. Propagate by cuttings. Requires a very rich soil and free supply of water.

Aralia papyrifera.

A very ornamental shrub. Leaves large, spreading from the main stem very gracefully. Succeeds best on the hills. Propagate by offshoots.

ARALIA GUILFOYLEI.

A magnificent shrub, of very erect growth and large compound leaves, deep green margined with white. Enjoys shade. Propagate by cuttings.

CODIÆUM VARIEGATUM, SYN. CROTON.

A common but very handsome shrub, with leaves blotched and marked with yellow.

CODIÆUM PICTUM.

Has leaves blotched with red and yellow.

CODIÆUM LONGIFOLIUM.

Has long narrow drooping leaves, variegated with yellow.

CODIÆUM NITIDUM.

Is of smaller and more dense growth.

Besides the above, there are many other varieties of Codiæum of less distinct character. All are very handsome shrubs, requiring a rich soil, well drained; they are propagated by cuttings.

CORDYLINA ENSIFOLIA.

A very handsome shrub, with a plume of large green leaves on a slender stem. Propagate by cuttings.

Dracæna ferrea.

An elegant erect growing shrub, with leaves which vary in hue from brownish purple to bright red, according to season. Enjoys shade and a very rich soil.

Excæcaria bicolor.

A rather rare shrub, with leaves of a pale green above and a bright amber colour on the lower side. Flowers minute. Propagate by layers and cuttings.

Fittonia argyrea.

A small creeping plant with foliage beautifully veined with white. Requires shade and moisture; should be grown on a broad pan. Fill with soil containing a large proportion of leaf-mould and sand.

Fittonia Pearcei.

Is like the above, but with the veins of a bright red colour.

Graptophyllum pictum.

A common but very handsome shrub; leaves pale green, irregularly blotched with white. Sends out shoots with green leaves. Another variety, Graptophyllum hortensis, has leaves of a deep purple. Both are easily propagated by cuttings.

PANAX COCHLEATUM.

A fine hardy evergreen shrub, with leaves somewhat resembling an oyster shell. Easily propagated by cuttings.

PANAX FRUTICOSUM.

A very elegant evergreen shrub; leaves very much divided and feathery.

PANAX NITIDUM.

Of smaller growth, and leaves divided into three small leaflets. All the varieties of Panax enjoy a soil containing lime rubbish, and of an open character. They are hardy and easily propagated by cuttings.

PEDILANTHUS TITHYMALOIDES VARIEGATA.

A beautiful variegated variety of the common edging, called Sher. Leaves green, with a creamy white variegation. It was discovered at Gunesh Khind in 1870. Propagated by cuttings.

FERNS.

FERNS as a rule love a still, moist atmosphere, a very free supply of water while growing, and shade from bright sunshine. But there are a few really beautiful ferns that are accommodating enough to be content with the want of some of these conditions and yet thrive.

The species of Nephrolepis.—All beautiful ferns with regular pinnate fronds bear full exposure to the sun without injury, still it is advisable to give all some degree of shelter.

Soil—As frequent watering is necessary, yet stagnant water is very injurious, the soil must be of a nature to receive and absorb what is required and allow the surplus to pass away freely. For this purpose a free admixture of pot shreds, broken small, is advisable, and the soil may be composed of one-half good loam, one-fourth decayed leaves, &c., one-fourth broken pot shreds. If the loam does not contain any lime, a small quantity should be added. The drainage at the bottom of the pot must be arranged carefully, keeping the convex sides of the pot shreds up to allow a clear passage for the water. Should any wormcasts appear on the surface of the pot, the plant should be turned out and the worms removed, as they very soon stop the drainage at the bottom. The manner in which some of the maiden hair ferns are grown at Gunesh Khind has some advantages, and the plants have been somewhat admired. A board is covered with a compost of one-half very calcareous loam, one-fourth leaf-mould, and one-fourth moss. The compost is laid down about an inch thick; on this is laid the small plants, which are then covered with a thin layer of moss, and the whole fastened down firmly with wire netting. A

board of this kind may be made of any shape, such as a shield or an oval, and when the plants are well grown, may be used to decorate a room by standing against a wall. Maiden hair ferns grown in this way are often more than a foot long. Four boards may be joined so as to make a pyramid and a vase placed on the top, from which water may trickle over the plants. This, if filled several times daily, will keep the ferns properly watered.

ORCHIDS.

IN Western India we have some of the most beautiful of this charming tribe of plants growing profusely in the jungles close at hand. Near the Ghauts, both above and below, where at least 100 inches of rain falls during the short monsoon season, seems to be their favourite home.

The greater number of beautiful Orchids are called epiphytal plants, as they draw their nourishment from the air and the minute portions of vegetable matter that are supplied to them by the bark of trees, moss, &c., with the rain water and dew. They require no soil commonly speaking, but are not parasites like the misletoe, which draws its sustenance from the system of the tree on which it grows.

About a month before the monsoon sets in is the most suitable time to get Orchids from the jungle. In collecting the plants, great care should be taken

to have the roots unbroken, as they take a long time to recover, and meanwhile make no progress. When removed to a dry climate, they should be planted in pots having large holes in the sides to admit air, and filled with pieces of wood and charcoal, with a few decayed leaves and moss. Hanging baskets, made of wooden spars, are also excellent, and even wire baskets are suitable if plentifully supplied with moss and pieces of wood; but the roots of Orchids and of all other plants do not enjoy close proximity to such a rapid conductor of changes of temperature as wire.

Anything that will impede the free passage of water or air should not be put into the pots or hanging baskets. During the growing season, that is, from the beginning to the end of the monsoon, water should be given freely twice daily, and towards the cold season gradually reduced until by January it has reached twice a week, at which rate the watering should remain until the monsoon again comes round. Shade from midday sunshine only is desirable, and the shade should be of a nature that will admit diffused light freely, such as the leaves of a thin tree. Of artificial shades, the common cocoa fibre matting is the best, as it is cool yet light and airy. There are some very fine terrestrial Orchids that are found growing in soil like other plants, and a free well-drained loam, with about one-fourth part leaf-mould, will be found a suitable compost to grow

them in. If taken from a jungle, they should be transplanted with a large ball of earth, as a slight disturbance of the roots may cause the death of the plant, though not for some weeks after transplanting. Meanwhile the plant will continue growing from the store of sustenance laid up in its tubers, and the loss may be attributed to some other cause.

One of the most beautiful of terrestrial Orchids is Anæctochilus setaceus, a charming little plant with the leaves bronzed and netted with gold. This plant is found on the Neilgherries and in Ceylon. It thrives well in a small pot with a mixture of yellow loam and leaf-mould, having the small pot placed in the centre of a larger one, surrounded with coarse gravel, the gravel covered with moss and a bell-glass. Water should be given to the soil in the pot once in two days during the rainy season when the plant is growing, and the surrounding moss should be sprinkled with water daily; but during the dry season water at the root and on the moss once a week is sufficient.

CHOICE CLIMBING PLANTS.

Antigonum leptopus.

N exquisitely beautiful plant; leaves heart-shaped, rough, pale green; flowers pink, small, but produced in such numbers as sometimes

to cover the foliage; root tuberous. Propagate by seed. Flowers nearly all the year round.

ARGYREA ARGENTEA.

Very strong growing, leaves heart-shaped, under-side white, flowers convolvulus-like, rose coloured, large. Propagated by seeds; flowers during rainy season.

BANISTERIA LAURIFOLIA.

Leaves oblong, dark green; flowers yellow. Propagate by cuttings. Flowers in rains.

BEAUMONTIA GRANDIFLORA.

Magnificent plant; leaves oblong; flowers very large, white. Propagated by layers and cuttings. Flowers in cold season.

BEAUMONTIA JORDONI.

Leaves and flowers smaller than the preceding; a very choice plant.

BIGNONIA GRACILIS.

A beautiful climber, that clings to walls by its own tendrils; flowers yellow, produced in hot season in great profusion for about a week.

BIGNONIA VENUSTA.

Leaves pinnate, flowers in long racemes, tubular, vermilion coloured. Flowers in cold season.

Calonyction speciosum.

A night flowering convolvulus, with very large pure white flowers. Propagate from seeds.

Cissus discolor.

A very beautiful plant, having heart-shaped, rich purple velvet leaves with white markings, underside amber coloured, enjoys moist shade. Propagate from cuttings. Flowers not conspicuous.

Clematis cærulea.

Large purplish blue; flowers in May and June. Propagate by layers.

Clitorea ternata.

A delicate climber, with pinnate leaves, and at the end of the rains producing large blue flowers, shaped like a pea flower. Propagate from seeds.

Cobea scandens.

Has pinnate leaves, and during the rainy and cold seasons produces bell-shaped dark lilac flowers. Propagate from seeds.

Convolvulus.

Very beautiful annuals, producing flowers of most exquisite and varied tints. Propagate from seeds.

CRYPTOSTEGIA GRANDIFLORA.

A naturalised climber of luxuriant deep green foliage, flowers rose coloured with purple centre. Yields seed freely.

ECHITES PICTA.

A very delicate climber, that adheres to walls and trees by the aid of minute clasping tendrils; leaves purplish, beautifully marked with white veins. Propagate by cuttings. Requires slight shade.

IVY,

In the Deccan, grows freely on the shady side of a house, but has none of the luxuriant green colour to be seen in Europe.

HEXACENTRIS MYSORENSIS.

A beautiful climber, with hastate leaves and flowers of a bright orange and rich brown colour. It grows in the Deccan, but flowers freely only on the hills during the cold season. Propagate by offshoots and cuttings.

HOYA CARNOSA. (WAX PLANT.)

A slow-growing plant with thick succulent leaves and umbels of rosy wax-like flowers. Propagate by cuttings. Enjoys slight shade and a moist situation. Soil must be very porous.

IPOMEA RUBRO CÆRULEA.

An annual convolvulus, with very large blue flowers ; produced in the cold season.

IPOMEA PESCAPRÆA.

An extensive creeping convolvulus, with bi-lobed leaves resembling a goat's foot-mark. Flowers rosy, produced during the hot season ; grows freely on the seashore.

IPOMEA LEARII.

A very beautiful climber, with large blue convolvulus-like flowers. Propagate by cuttings.

LONICERA JAPONICA. (THE JAPANESE HONEYSUCKLE.)

Flowers white, changing to yellow ; very fragrant. Propagate by cuttings.

LONICERA SEMPERVIRENS.

Flowers scarlet ; plant not so vigorous as the above. Propagate by cuttings.

LOPHOSPERMUM SCANDENS.

Leaves soft and clammy ; flowers like a foxglove ; grown during the rains and cold season. Propagate from seeds.

MAURANDIA BARCLAYANA.

A delicate climber, giving rosy pink flowers during the rains and cold season. Propagate by seeds or cuttings.

PASSIFLORA TRIFACIATA.

A passion flower with very beautiful leaves; when young, of a rich purple with three white bands down the lobes of the leaves; flowers small, white. Propagate by cuttings.

PASSIFLORA CÆRULEA

And its numerous varieties; propagate by cuttings.

PETREA VOLUBILIS.

A charming shrub, with very hispid leaves and lilac flowers; produces in very profuse racemes during the rains and cold season. Propagate by layers.

PHASEOLUS CARACALLA. (SNAIL CREEPER.)

A member of the pea family, with the flowers of a rose colour and curled up like some shells. Propagate from seeds.

POIVREA COCCINEA SYN. COMBRETIUM PURPUREUM,

Is one of the most beautiful plants in cultivation; the foliage is of a luxuriant dark green, and the flowers, which are produced in elegant racemes, are

of a brilliant scarlet colour. It succeeds well, planted in a pot or tub with a soil consisting of three parts of fine alluvial loam and one part leaf-mould. It is propagated easily by layers, but with the aid of fine sand and bell glasses. cuttings may be struck easily,

QUISQUALIS INDICA. (RANGOON CREEPER.)

A straggling shrub, which may be trained to cover a wall or post ; flowers vary in colour, from white to rose. Propagate by cuttings.

STEPHANOTIS FLORIBUNDA.

A climber with dark green entire leaves and beautiful white wax-like perfumed flowers ; produced in profusion during the cold and hot seasons. Propagate by cuttings.

STIGMAPHYLLON PERIPLOCIFOLIUM.

A charming climber, with small heart-shaped leaves and beautiful racemes of yellow flowers with fringed petals, produced during the rains. Propagate by cuttings.

TECOMIA JASMINIODES.

A large growing climber with pinnate dark green leaves and pale rose coloured flowers, produced throughout the year.

THUNBERGIA FRAGRANS.

A delicate climber with beautiful pure white flowers. Raised from seeds.

THUNBERGIA GRANDIFLORA.

A climber of very rapid growth and large lilac flowers. Propagate by cuttings.

PART II.

DESSERT FRUITS.

The Pine Apple

REQUIRES a soil very rich in decaying vegetable and other nitrogen-yielding matters, therefore the ordinary soils in this country are quite unfit to grow pine apples while in their normal state, but by manuring heavily with decayed leaves and cow-dung, any good garden soil may be made to grow them. The filth from shambles and dried fish is also excellent manure. Plant the crowns that grow on the fruit or suckers that come up at the side of the plants; water slightly at first until they have taken root; but afterwards, particularly as the flower appears, water heavily twice a week, giving liquid manure at every alternate watering, and keep the drainage perfect.

The Grape.

The Grape Vine grows most luxuriantly in an open very friable loamy soil, provided it is not of a tenacious nature and apt to retain water too long; if it contains a good supply of decaying animal and vegetable matter, other conditions are not of importance. Shelter from strong winds and the midday sun is necessary, as the fruit does not ripen when exposed to the full glare of the sun, neither will it ripen if the average temperature is high, and the atmosphere moist, such as is the case in the Concan and other low-lying places; the temperature of the Deccan even is too high during the early part of the rains, and fruit formed at that season does not ripen and should be cut away as soon as it is seen. Fresh flowers will appear towards the end of the rains, and this will yield ripe fruit about February. Immediately after the fruit is cut, the growth of the vine should be finished for the season. At this time water should be withheld and the fruit-bearing shoots cut back to within two buds of their origin. Turn up the soil thoroughly during the hot season, and apply a large quantity of whatever manure is available. When the vines have started into growth at the beginning of the rains, if grown as a standard, tie in the strong shoots to prevent their being broken, or if grown near a house, then fix them to a wall; in this case the eastern side is preferable, and when the

second flower of one or two bunches has formed its young berries, prick out the end of the shoots within about five leaves from the farthest bunch of fruit. Thinning out the berries, as is done in Europe, is seldom practised, but its effect cannot be otherwise than beneficial in increasing the size of the grapes and the beauty of the bunch.

The Pomegranate

Enjoys a soil containing a good proportion of lime and of an open porous nature, thoroughly drained and enriched with any well rotted manure. The finest varieties are seedless and must be propagated by inarching on to a common seedling. A caterpillar is very destructive to the fruit when the trees are grown in a close sheltered position. In pruning remove all weakly shoots and the points of fruit-bearing branches as soon as the fruit is formed, and as it ripens protect from vermin by tying a bag over it.

The Fig.

The cultivation of the fig is carried on with great success in the Deccan, yet the flavour of the fruit is not to be compared to some of the European varieties. The variety in common cultivation has a great resemblance to the violet fig of Europe. The black soil of the Deccan suits the fig, but it will grow freely in any good soil that contains a good proportion of lime and is thoroughly drained.

Manure.—The common street sweepings, well rotted, are an excellent manure for the fig tree; stronger manures are apt to produce a too luxuriant growth of wood.

Water—Must be given freely, once a week during the cold season when the tree is in vigorous growth, and continued during the dry weather until the fruit is all gathered; but very little should be given during the hot season when the trees are at rest.

Pruning.—As the fig bears only on one and two-year old wood, after the tree has been brought into good form a part of the two-year old wood should be cut out during the succeeding hot season, and the soil opened up thoroughly, manured, and laid out for irrigation.

The Guava

Thrives thoroughly well in the black soil of the Deccan and requires very little special culture. The best varieties are propagated from layers, but good fruit trees are to be got from seeds. Watering once in fifteen days in dry weather during the growing season is necessary, but during the hot season, when the trees are at rest, very little water should be given.

The Orange

Succeeds admirably in the higher parts of India, such as the Deccan and the Mysore Country, but

does not yield good fruit in the Concan or other low-lying districts.

A deep alluvial loamy soil is the most suitable, and it may be enriched with street sweepings that have been laid up in a heap for some time. The orange does not grow freely or make a handsome tree when on its own roots, therefore it should be budded on a citron or sweet lime stock. The budding may be performed at any time when the stock is growing freely, but the beginning of the rains is the most favourable time. Budded plants can be obtained from native nurserymen about Poona.

When these are procured, it is very necessary to see that they really are budded, and then to keep down the shoots from the lime stock, which, if allowed, it throws up with great vigour. During the first few years the trees should be looked over frequently, and any shoots that have thorns should be traced to their source, when it will be found they come from the stock; these must be cut away close to the main stem of the plant.

Young orange trees should be watered once in three days until they have taken possession of their new quarters and begin to grow freely; after that, once in ten days will be sufficient during hot dry weather. Little pruning is necessary for orange trees, but weakly or dead shoots should be cut out and extra

luxuriant shoots should have the tips taken off to keep the tree in a regular shape and cause an equal distribution of the sap.

The Custard Apple (Anona squamosa)

Grows to great perfection in the Deccan, and requires but little special culture; it delights in a very loose dry soil, such as the debris of an old building or an embankment, and it may often be seen growing wild from clefts in the walls of old castles. The tree often bears more fruit than it can ripen properly, therefore when very young, a good part of the fruit should be taken off, and when well grown, the most promising tied up in bags to keep off birds and squirrels.

The Mango (Mangifera Indica).

The varieties of mango are very numerous, and the qualities of the fruit are as varied as the number of sorts is great. Some very fine varieties are cultivated about Bombay, and from their chief source have got the name Mazagon mangoes. That the superiority of these sorts is due to local circumstances of soil and climate there is little doubt, as many grafted trees have been taken from Bombay to other parts of the country but with very indifferent results, the fruit giving very little of the luscious nature of the Mazagon mango. The fine varieties

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are propagated by inarching on to seedling stocks, and plants may be purchased from nurserymen at Bombay. The inarching, however, is generally done in a very clumsy fashion, so that if the young plants are not carefully treated, they will be lost. It is generally advisable to re-inarch on to a healthy feedling growing in the ground. The soil in which the mangoes grow at Mazagon is a stiff yellow loam, containing a large proportion of vegetable matter and on a gravelly sub-soil. It is retentive of moisture, but there is no stagnation of water. The rainfall is about 75 inches annually, and the vicinity of the sea keeps the atmosphere constantly moist. Where similar conditions of soil and climate are available, the Mazagon mango may be grown, but a change of circumstances alters the character of the fruit.

The Strawberry

Grows freely and ripens its fruit in the Deccan, but it is on the hills at an elevation of 3,000 feet that the most success is met with. A thoroughly well worked loamy soil is required, and it may be enriched by a liberal supply of whatever manure is most convenient. There is little danger of giving too much manure, provided it is well mixed with the soil. Propagation is generally by runners, which should be taken from the parent at the end of the rainy season and planted in beds about one foot apart; if

these show an inclination to throw out running shoots, they should be pinched off. A liberal supply of water twice a week is necessary, and during the fruiting season, from January to May, frequent supplies of liquid manure added to the water will be useful. During this time any disposition to throw out runners should be checked; but, after all the fruit has been gathered, the plants should be allowed to make runners which are wanted for next year's plantation.

The Melon.

Of the many varieties of melons that are grown in this country, the best suffer greatly from any excessive moisture in the atmosphere, yet they enjoy a very large quantity of water at the root. Any rich friable loamy soil is suitable. It should be laid up in large ridges, between which the seed should be sown and the plants trained over the ridges so as to be perfectly secure from excess of moisture. The seed may be sown any time from September to December. When the plants have grown about a foot, the point of the shoot should be taken off so that several other shoots may branch out; the points of these should also be taken off until there are about a dozen branches. These may be permitted to remain until one or two fruits have formed on each branch, then the points should be taken from the branches and any fresh shoots that

appear should be pinched out. Water should be given freely once in two days until the fruit is nearly ripe, when it should be discontinued. The Melon, like others of its tribe—the Cucumber, Pumpkin, &c.—has the male and female organs in separate flowers and sometimes they are on separate plants. Fertilization is generally done by insects, but sometimes, when only a few plants of a superior kind of Melon are grown, it is advisable to fertilize by hand. For this purpose a small camel-hair brush is required. The difference between the male and female flowers is not easy to describe in common language; the best way to see the difference is to work the little brush about gently in a flower; if a quantity of yellow powder adheres to the brush, that will be a male flower. Examine this flower well, note the form and arrangement of the five anthers in the centre of the flower, then look at another, if it is a female flower, the difference will easily be seen. It has no yellow dust (*pollen*), but there is a little *stigma* in the centre of the flower to which the pollen should be applied gently. If there are plenty of common Melon plants in the garden, it will be necessary to cover this flower with a net to prevent insects from carrying to it the pollen of other Melon flowers.

The Banana.

The small yellow thin-skinned fruit, called by the Natives 'Son-kale,' is one of the finest fruits in cultiva-

tion. It is to be found plentifully throughout the country, but is expensive, as owing to the great height to which it grows, it is very easily broken by the wind, and must have a really well sheltered situation. It thrives equally well in the black soil of the Deccan or the alluvial of the Concan, provided the soil is enriched by a liberal supply of strong manure. Oil cake, which is too strong a manure for most plants, is excellent for the Banana. It should be broken small and dug in near the roots. Night-soil is also an excellent manure for the Banana ; it may be used fresh if decayed is not procurable.

There is a large red fruited variety of fine flavour that is plentifully grown about Bassein. It will grow freely enough in black soil, but I have never seen it perfect its fruit properly in such a soil. I think it is probable that the red colour of the fruit is produced by some metallic oxide in the soil, and where this is wanting, it refuses to thrive. It ripens well in soil of a yellow loamy character. The Chinese Banana is a very dwarf variety, but its fruit is inferior to the sorts previously mentioned. March is the proper planting season for the Concan and the Deccan, that is, the beginning of the hot season. Where the climate is excessively hot and dry during the hot season, it will be better to defer planting till near the end of the season. Plenty of water once in four days and free drainage are necessary.

The Peach.

A Chinese variety of Peach yields fruit very freely on the Deccan and at Panchgunny, but the luscious varieties of Europe are, in this climate, very shy bearers, though they flower freely. Try watering overhead gently in the evening while in flower. This method is adopted for Peach trees under glass in Europe, and I have no doubt but it will be successful in this country, though I have not had an opportunity of trying it. The pruning required in this country is merely taking off the points from fruit-bearing branches. The careful exposure of the fruit and the branches that are to bear fruit in the following year to the light that is so necessary in cold climates, is not required in this country.

The Apple and Pear.

Apple and Pear trees grow with perfect freedom in the black soil of the Deccan, but rarely set fruit. This might be overcome by syringing in the evening while in flower, if the result was worth the labour; but as the heat in Western India is too great to allow sugar to form in the fruit, it is always harsh and acid. The same result is met with when the Gooseberry and Currant are grown in hot countries, and it is only in the cold season that the Vine will ripen its fruit. On the high lands of Mysore, very fair Apples are grown.

The Pumulo

This beautiful tree, whether perfuming the air with its rich waxy flowers or gladdening the eye with its massive fruit, is one of the most striking and agreeable objects in the garden. It thrives well in the Deccan, but better where the moist heat of the Concan proves detrimental to its relative, the Orange, and enjoys a richer soil than the Orange will fruit in. Old building material, such as broken bricks and mortar, mixed with well decayed cowdung, are excellent manures for this tree, as it delights in a rich porous soil and an ample supply of water with thorough drainage. A very fine flavoured seedless variety is in cultivation, but it seldom finds its way to the bazaars.

Propagation is generally done by budding on the common citron, a tree which yields a large coarse fruit, that is used by dyers for the acid it contains. Very little pruning is required, but all weakly or decaying shoots should be cut out, and the bunch of fruit should be thinned out as soon as they reach the size of marbles, till at most one remains for each fruit spur; but if there are still more than one to each branch, it is advisable to thin out still further. The fruit must be supported so that its weight may not bend down the branch and impede the flow of the sap.

The Lime and the Sweet Lime

Require the same culture as the Orange, but may be raised from seed.

The Lemon and the Bitter Orange

Thrive better on the hills, at an altitude of 3,000 feet, than in Western India generally.

The Breadfruit (Artocarpus incisa).

This very beautiful tree thrives well in the Concan, in a very rich soil of a friable porous nature. It is propagated by layers. Water is required once in four days until the tree is established; afterwards once in fifteen days is sufficient.

GARDEN CALENDAR FOR WESTERN INDIA.

PEOPLE of experience or practice in gardening have so little faith in Calendars, that it is often said the information wanted is never to be found in them; but these '*Hints*' are not written for people of great experience, and there is no doubt that by scanning the Calendar occasionally, the attention may be drawn to work that is more fully described in its proper place. It must not be thought that the work indicated should be done at the time stated *only*, as circumstances may prevent it, and there are other times at which the work noted may be carried out with equal success. The most that can be said is that the time noted in the Calendar is generally suitable for the operations that are mentioned.

JANUARY.

THIS is one of the gayest months of the year in Indian gardens, except in the few places where altitude or latitude is great enough for frost to affect vegetation.

Nearly all the gay flowering annuals should be in full beauty, and Tea Roses flowering freely. If Budding has been neglected earlier, it is not yet too late. Cauliflowers should be ready for cutting, and Cabbage, Beet, and a great variety of vegetables at their best.

In places where the rain-fall is heavy, this is the best time to put in cuttings of Roses, and other flowering shrubs.

Inarch Mangoe, Guava and Pomegranate trees.

Watch flowering Melons, and if you have a superior sort, fertilize by hand and cover the flower with a piece of fine net to keep off insects.

FEBRUARY.

TEA ROSES that were budded during October should be in fine flower. Thin out the flower buds from newly budded plants, so that they may not exhaust themselves.

Turn up all ground that is not occupied with crops.

Grapes should be ripening ; reduce the supply of water slightly.

Sow Cauliflower and Celery to be ready at the beginning of the rains. It requires great skill and care to carry them through the hot season, but it can be done by covering the ground with leaves or straw, frequent hoeing and regular watering.

Prune Cissus discolor plants, put in the cuttings, two eyes long, in sand, and keep the old stock dryish till May ; if in a pot, plunge it in the earth in a cool place. Pinch out points of fruit-bearing shoots of Melons and Gourds, and fertilize such Melon flowers as need that assistance.

MARCH.

PLANT Banana offshoots.

Sow Cucumbers.

Prune Vines that have given their fruit, and keep them dry till the rains come on.

Turn up a second time all unoccupied ground, and look after manure to be put in at the end of May. Put in cuttings of Roses, Geraniums, and such like plants, if they have been neglected earlier.

Cut away the bunch of unexpanded flowers at the end of the fruit stalk of Bananas, and give the trees support, to prevent their being blown over by the usual midsummer storms.

See that budding ties have all been removed, and that the wire or string that fastens labels is not cutting the heads of plants. The labels attached to all lately budded Rose trees should be removed from the main stem to one of the branches, where they are not likely to do great mischief if neglected.

APRIL.

THE Amarylis will be in flower and should be protected by an awning to retain the beauty of the flowers.

Evergreen trees will be making their hot season growth and shedding their old leaves. Collect all the leaves that can be found, and bury them in a pit to make leaf-mould; there is nothing more essential to success in growing flowers than a supply of this manure.

Where the rainfall is under 50 inches, early in the month sow Asters, Calliopsis, Pinks and Phlox Drummondi. For early flowering, a shady spot with shelter from hot winds is required at this season.

Get in epiphytal Orchids from the jungles, cutting away the branch of the tree they are found on rather than injure the plant by pulling it off; if the branch is too large to cut, be very careful not to break the roots while taking off the plant, as they take a long time to recover when broken.

MAY.

THIS should be a very busy month. If the rainfall is not over 50 inches annually, sow Peas, French Beans, Bhendies, Cucumbers, Carrots, Tomatoes, Asters, Balsams, Coxcombs, Mirabilis, and other annuals that are called tender or half-hardy in Europe. Annuals called hardy in Europe should not be sown till the end of the rains.

Bulbous and Tuberous rooted plants, such as Achimines, Gloxineas, Caladiums, Dahlias and Artichokes, will be starting into growth, and should be re-potted or transplanted into fresh ground.

Prune Roses, Figs, and Peaches. Plant Gladiolus roots towards the end of the month, with a liberal supply of well rotted manure mixed with the soil, and a lot of sand round the bulb. Plant from two to four inches deep, in proportion to the size of the bulb. As orchids start into growth, begin to water them more frequently until they get water daily either by hand or from rain by the time the monsoon comes.

Re-pot all plants as they start into growth.

Sow white and green Knol-Kohl, or Kohl Rabi.

JUNE.

THE monsoon comes over Western India during the early part of this month, and after the first burst of rain, there is generally some fine weather, which is the seed time *par excellence* throughout the Bombay Presidency, and the most favourable seed time for gardens in the parts of the country where the rainfall is not over 50 inches annually. There are very few seeds that may not be sown at this time with advantage. Note a few of the exceptions—Candytuft, Pansy, Antirrhinum, and Petunia succeed better two months later. Spinach and the Globe Artichoke don't like the heat at this season and are better sown later; while all the Cabbage tribe, including Cauliflower, Knol-Kohl, Brussels Sprouts, Brocoli and Turnips are so much subject to attacks of Greenfly during the month of July, that it is better to defer sowing.

Plant out seedlings that have been raised in shelter.

Sow Radish and Lettuce fortnightly, and Mustard and Cress weekly or oftener from this month to November.

JULY.

IF any of the Cabbage tribe was sown last month, they are likely to be infested with Greenfly. For this pest, give frequent doses of an infusion of cheap tobacco or salt-water. The Cucumber tribe will also be infested with a little red-winged beetle, which eats the young leaves. The tobacco infusion will make his dainties unpalatable.

Weeding is the grand occupation of this month, and should be done thoroughly. The weeds should not only be cut down but carried to a pit and buried. They make an excellent manure, and should invariably be cut down before the flower appears. "One year seeding, ten years weeding" is not more trite than true.

Pick off the rainy season flowers from Vines, as they do not ripen fruit from these flowers and will flower again later.

Plant out Balsams, Coxcombs, Asters, and all kinds of flowering plants that were sown last month.

AUGUST.

SOW the main crops of Cabbage, Cauliflower and Celery during this month, and take care to have the white varieties.—The purple colour in many varieties is caused by alkalie which the plant takes up, and in proportion to its power of assimilating this alkalie is its power of resisting cold and its harsh taste; but as we do not require our garden plants to resist much cold, let us have the white varieties.

Give Caladiums and other plants that are growing fast and perhaps pot-bound, frequent doses of weak liquid manure.

Hoe and weed every dry day. Clip edgings and take the points off the ends of straggling shoots of Noisette Roses.

Sow Cyclamens, Cinerarias, Primulas, Calceolarias and Balsams. Bud Oranges and Pumaloes, preferring the Sweet Lime as a stock for Oranges, and the Citron as a stock for Pumaloes. Take care that your Pumaloe buds are from a seedless fruited tree. The Citron stock is generally used for Oranges, as it is hardy, but the Sweet Lime stock improves the flavour of the fruit.

SEPTEMBER

S an excellent time to transplant Roses and other shrubs that on the Deccan will have finished their rainy season growth, and on the Concan will just be starting from the rest that excessive rain sends them to.

Sowings may be made of Cauliflower, Cabbage, Turnip, Carrot, Knol-Kohl and flowering annuals, such as Candytuft, Lobelia, Pansy, Antirrhinum, Balsam, Coxcomb, Mignonette, Nasturtium, and Petunia.

On the Concan and in Bombay this is the general sowing time for nearly all flowering plants, as the heavy rains that would cause tender seedlings to damp off are nearly over. Let your seed-sowing compost have fresh loam, leaf-mould and sand in equal proportions if possible. If good sand not apt to bind is not procurable, bricks pounded and sifted make an excellent substitute.

Sow Petunia for cold season flowering; the treatment is the same as for Portulaca.

OCTOBER.

IN places where the rainfall is not over 50 inches annually, the growth of the season on Rose stocks should by this time be getting firm and ready for budding. As soon as the wood is firm enough to bear handling without breaking off short, it is ready. Good plump buds are to be got at this time also, and budding may safely be carried on up to February.

Put in cuttings of Cypress trees. Sow Tomatoes and annuals for succession.

Maiden-hair Ferns will now be making strong growth, see that the supply of water is not stinted.

Re-pot all plants that are pot-bound and required to grow on during the cold season. Gradually reduce the supply of water to Orchids from daily during the monsoon to twice a week from January to June.

Water freely Pumaloe trees that are swelling their fruit.

NOVEMBER.

THIS is the general season for putting down cuttings in places where the rainfall is under 50 inches annually; but where the rainfall is heavier, the wood will be found to be scarcely ripe enough, and the time for cuttings, as a rule, should be January.

Cauliflower just coming into flower will be greatly benefitted by a liberal supply of weak liquid manure, and Celery will be grateful for similar treatment every alternate day.

Sow Beet on the spot it is intended to grow on, unless you possess extra skill in transplanting, as if not, the root is sure to be disfigured.

To transplant Beet properly, soak the seedling bed thoroughly with water and pull up the plants gently, take a dibble and make a hole a good deal larger than the root requires, let the root down straight in the centre, insert the dibble about two inches from the side of the hole, and press the plant with the soil to one side.

DECEMBER.

SEPTEMBER sown annuals should be in bloom. If cold winds prevail at night, water in the morning instead of in the evening, as is advisable at other times.

Look out for a little Caterpillar that at this season eats the cuticle of rose leaves. Cutting off and burning the infected branches is the best cure. Red spider, thrip, and mealy bug also appear on plants that are crowded near to bungalows. A thorough washing with a jet of water repeated daily for a week will kill the pests.

Look after roses that refuse to open their buds, see that the drainage is perfect, and give frequent weak doses of liquid manure.

Epiphytal Orchids will by this time have finished their growth, and should get water about once a week only from this time till the rains come on.

Take the points of fruit-bearing vine shoots and keep about one-half of the young growth cut back so as to let the fruit get the benefit of the sap, and keep the fruit shaded by foliage. Untie buds that were put in some time ago and have grown a few inches.

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